

**Achievement of Market-Friendly Initiatives and Results Program  
(AMIR 2.0 Program)**

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**Moving Towards an Integrated Trade and  
Investment Information System in Jordan**

Final Report

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## Acronyms

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ABS	Annual Business Survey
ASEZA	Aqaba Special Economic Zone Authority
ASYCUDA	Automated System for Customs Data
BIS	Business Information System
BPR	Business process reengineering
CBJ	Central Bank of Jordan
CSO	Central Statistics Office
DOS	Department of Statistics
ESCWA	Economic and Social Commission for Western Asia
EU	European Union
FDI	Foreign direct investment
FTA	Free trade agreement
FZC	Free Zones Corporation
ICTI	Information and Communications Technology Initiative
IDA	Industrial Development Authority
IEE	Irish Economy Expenditures
IM	Information management
IRR	Internal rate of return
ISD	Investor Services Database
IT	Information technology
ITF	Investment Task Force
ITS	Investor Tracking System
JAED	Jordan Authority for Enterprise Development
JEDCO	Jordan Commercial Center and Export Development Corporation
JIB	Jordan Investment Board
JIEC	Jordan Industrial Estates Corporation
KPI	Key performance indicators
MOICT	Ministry of Information and Telecommunications
PSPI	Private Sector Policy Initiative
TRC	Telecommunications Regulatory Commission
US	United States
USAID	United States Agency for International Development
WTO	World Trade Organization

## **Executive Summary**

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### **Background**

In recent years the Government of Jordan has taken important strides to stimulate international trade and investment. It introduced incentives to attract investment and promote exports, adopted new legislation and simplified customs and business registration and licensing regulations. It also established industrial estates, free zones and qualifying industrial zones, all of which boast low taxes, minimal bureaucracy, sound infrastructure, access to labor and investor-friendly policies. At the same time, the country actively participated in the global market by moving forward with its commitments under the World Trade Organization (WTO), sought to expand trade under its free trade agreement (FTA) with the United States (US), and signed an association agreement with the European Union (EU) that will soon be implemented. On the tax side, it recently enacted legislation to exempt exports from sales tax, simplify corporate and personal tax rates and exempt reinvested corporate profits from income tax.

These developments have contributed to a recent expansion in exports, which in part is attributed to the Jordan-US FTA, yet levels of foreign direct investment (FDI) remain below expectations. Moreover, policy makers, business owners, investors, researchers and others interested in Jordan's trade and investment climate encounter numerous difficulties in tracking and measuring the impact of these events on trade and investment, mainly because information and statistics gathering must be undertaken using various resources and once found are not reliable.

The Government of Jordan, mainly through its Investment Committee, has started to address these problems. It recently proposed the consolidation of the various agencies involved in FDI promotion into one new entity, which would be named the Jordan Authority for Enterprise Development (JAED). International best practices in Ireland and Singapore indicate that unifying investment promotion and economic policy-making under one agency is more effective in accelerating FDI than having multiple agencies, as is currently the case in Jordan. Without this integration, Jordan risks delaying or even losing important economic opportunities. It is unclear, however, whether decision-makers are prepared to streamline or, in some cases, eliminate existing agencies. Therefore, while the final outcome remains unpredictable, it is clear that any approach planned by the Private Sector Policy Initiative (PSPI) of the AMIR Program must be flexible, and ensure close collaboration with Jordanian counterparts and the United States Agency for International Development (USAID). In light of this situation, this report will initially propose multiple levels of support, to be increased depending on the course of action taken by the Government.

### **Framework for Information**

Advances in Jordan's information environment as they relate to trade and investment are much more limited than those made in recent years in the information and technology (IT) sector. The changes that have occurred in trade and investment are mainly driven by the E-Government program, and limited yet focused assistance by the Information and Communications Technology Initiative (ICTI) and PSPI Initiatives of the AMIR Program. While it is true that technological improvements have been introduced in key

ministries involved in trade and investment, such as website redesign, business process reengineering, and software and hardware upgrades and new purchases, the underlying constraints to developing an integrated trade and investment information system remain relatively unchanged compared with two or three years ago. Of the six major recommendations presented in the report on trade and investment systems in Jordan in 2001, progress has been made in only two areas (websites and economic reports), and little, or no, action has been taken on the remaining four (definition of a trade and investment information strategy, creation of new databases to support trade negotiations and policy decisions, organization and dissemination of information, upgrading of technical capacity of staff, expansion of trade statistics coverage).

In terms of organizational structure, under the new JAED key trade and investment institutions in Jordan will change their focus, responsibilities and functions. The Jordan Commercial Center and Export Development Corporation (JEDCO) will undergo a radical change to expand its current unique focus on exports to a two-prong approach for enterprise development and export promotion. Modeled after Enterprise Ireland, the new Jordan Enterprise Development Corporation will aim to promote the growth of all sizes of companies through technical assistance that includes international best practices for management and market research, entrepreneurship skills and a wide range of business development services including feasibility studies and business plans. It will also develop a linkages program, act as a facilitator and liaison for new investment projects within Jordan, and establish overseas offices to promote exports abroad.

Modeled after Industrial Development Authority (IDA) Ireland, the Jordan Investment Board (JIB) will also undergo an important transformation that will result in important changes. It will no longer be responsible for enterprise development, and will focus on inward direct investment. It will emphasize investment promotion, rather than investment facilitation, establish an overseas network, and facilitate the matching of investors with industrial estates. The role of the Jordan Industrial Estates Corporation (JIEC) will narrow considerably as a result of reform in order to focus on the management of public industrial estates and the facilitation of enterprise operations within those estates. It will also assume the regulatory role of private industrial estate development, and enter into joint-venture agreements with the private sector to develop land.

### **The Irish Information Model**

Two guiding principles of the information policy established by Forfás are that (i) data and information gathering must minimize the impact on the private sector and that (ii) Forfás must produce hands-on data that are readily available. The insistence of Forfás on good solid data that is readily available allows policy makers to analyze information, quickly make recommendations and move swiftly to implementation. Because Ireland is a small economy with an equally small geography and a small population, it is easy to measure. But because of these characteristics, one large company is capable of having an enormous impact on its tax base, and perhaps on other parts of the economy as a whole. The case of Jordan is similar in many respects.

Forfás relies on data from other governmental agencies as a base for its data warehouse. As such, one of the most important challenges is to maintain information up to date from outside organizations. Therefore, Forfás charges individuals within partner organizations with the responsibility of data maintenance. Forfás also relies on surveys to quickly

gather information. In terms of the organization of the internal information system of Forfás, IT planning is driven by a three-year business plan that contains critical success factors and clearly stated objectives. Based on that plan, systems are set up to support business objectives.

Surprisingly, Forfás has developed a limited number of information applications having to do with enterprise development, trade and investment. The Business Information System (BIS) was developed to provide multiple-user access to a common, comprehensive industrial database on which informed policy decisions are based. The main users of the system are those involved in planning and policy-making. Infrastructure Ireland is a web mapping and database application that provides a breakdown of infrastructure capabilities in various parts of Ireland. The main purpose of the application is to offer information to a potential investor on the physical infrastructure of Ireland, thereby saving him time so that he can focus on other information needed to make the decision to invest. The Irish Economy Expenditures (IEE) application measures net economic benefits provided for amount of capital invested in companies for jobs. The objective of the application is to determine the internal rate of return (IRR) of policy decisions and programs. It is used as source to identify new programs, and measures the impact of the National Technology Transfer Program and the National Linkages Program. Forfás also publishes research reports that are readily available on its website, and has developed other information applications that feed into the BIS system.

## **Changing Information Systems**

When the new JAED is approved, action should be taken to begin the redesign of the current information systems or the development of new ones. In the case of JEDCO all information systems that are currently in operation will require complete revision and a new set of applications will be required. The greatest amount of effort and funding will be needed to develop and implement the three systems to (i) develop a linkages program and database, (ii) support the registration of investment projects ('One-Stop Shop'), and (iii) facilitate the process of matching investors with public or private industrial estate property. Other systems should be added to focus on entrepreneurship and export promotion. Electronic links to overseas offices should also be established.

The JIB has two investor information systems, an Investor Services Database (ISD) and an Investor Tracking System (ITS). Neither system currently functions well due to limited features and flexibility, lack of a follow-up system and inadequate reporting. Give these limitations, promotion officers rely on email for information on the status of investors. Despite the obvious need for improved applications and requests made by upper management, JIB staff has resisted the adoption of new systems. The basic complaint was that the new ITS system is not user-friendly, is inefficient and complicated, and that the Arabic Oracle system used is sufficient for the requirements of the JIB. Moreover, transfer to the new system required JIB staff to re-key basic data, which they were apparently unwilling to do.

The proposed merger between the JIEC and the Free Zones Corporation (FZC) implies that databases and applications currently housed in the two agencies will be combined or managed by one agency. Before the merger of any applications between the two agencies is considered, serious data problems with the JIEC database require correction. Researchers and technicians found systemic and procedural failures in that database that

indicate that it is not capable of producing consistent information. Lessons can be learned from the content side of information management in the Aqaba Special Economic Zone Authority (ASEZA), especially in the implementation of its 'one-stop shop' to assist investors. While similar to the business process reengineering (BPR) currently underway at the Ministry of Industry and Trade, that being undertaken at ASEZA is much less complicated since it does not require approvals from various ministries, and the registration procedures at ASEZA are already streamlined. Finally, the launching of the JAED will create a new institution that will require completely new information systems. The so-called 'front-office' systems could be modeled after applications currently in use in Forfás/Ireland; the 'back-office' systems could be developed using off-the-shelf applications.

## **Next Steps**

Policy makers can act now to improve the current trade and information system in Jordan, rather than wait for JAED approval. Even if JAED were not approved, a plan could still be designed to create the basis of a coordinated and interactive information system. The likely candidate responsible for initiating change and its implementation in the absence of JAED is the MIT, the agency to which JAED will ultimately report. The AMIR Program is considering the recruitment of a Chief Information Officer (CIO) who will work on an 'loan' basis initially at the MIT and then transfer to each of the JAED-related institutions for a short period of time. Ultimately, it would be most beneficial for JAED to hire its own CIO to effectively establish and manage an integrated trade and investment information system.

Until the MIT CIO is recruited, the E-Government program can act as an impetus to make progress, as in the past. Also, the PSPI and ICTI Components of the AMIR Program should coordinate their activities to make sure that joint efforts are maximized while working towards a bi-level plan of action. The first level sets the framework for a business model and defines how agencies will work together. The business model is one part of the information architecture of an overall information management system for JAED and its partner institutions. Ideally, the CIO would lead the development of such a model, which is part of an overall information management (IM) plan. In the absence of such a plan and a CIO, a steering committee could be established with representatives from JIB, JEDCO and the JIEC to discuss the following basic issues. The second addresses the current situation: no standards of data or information exist, no way to communicate across agencies is present, and no information is shared across agencies. The main agencies in question are the MIT, the JIB, JEDCO and JIEC. Box S.1 summarizes the priorities of actions to be taken. Applications in bold type will likely require the greatest amount of funding and effort.



<b>Box S.1 Priorities for A New Trade and Information System</b>			
<b>Responsible Agency</b>	<b>Application</b>	<b>Action Needed</b>	
		<b>Before JAED</b>	<b>After JAED</b>
<b>MIT</b>	<b>Companies Control and Central Registration Databases</b>	-Adopt common company tracking number to be used in MIT and across all agencies. -Lay out Master Plan for company registration and licensing within MIT and outside (to be undertaken by CIO).	▪ Draw on statistical reports for policy decisions
<b>JEDCO</b>	<b>Linkage Program and Database</b>	-Undertake inventory of data-bases that could be used in program. -Based on that inventory, implement recommendations to standardize databases.	▪ Lay out framework for linkage program and assign responsibilities.
	Trade Data from DOS	-Decide which trade statistics are of most use to exporters and importers, and work with DOS to clean up those statistics.	Create application on website to provide snapshots of trade situation or reports that permit user-defined queries (building on DOS statistics).
<b>JIB</b>	Investor Promotion System (IPS)	-Hire technicians to determine ways to standardize or combine IPS and ITS, making sure to use company tracking number from the MIT and to completely revise reporting system (internal and external). ▲	▪ Transfer part of database to JEDCO and link two systems.
	Investor Tracking System (ITS)		▪ Transfer part of database to JEDCO and link two systems.
	IPS & ITS	-Based on (JEDCO-3) above: ▪ Clean up JIB databases. ▪ Clean up JIB reporting system (internal) and create new reports on web. ▪ Create plan to improve existing JIB one-stop shop.	
<b>JIEC</b>	Investor Database	Clean up JIEC database and standardize information based on recommendations in linkages report, making sure to use MIT company tracking number.	Merge two databases.
<b>JAED</b>	Research reports	Set research agenda and define further information requirements.	
Note: See Chapter 5, Box 5.2 for details.			

# 1. Introduction

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## 1.1 Objective

The primary objective of this report is to present the analysis and results of an initial trade and investment information needs assessment that focuses on the requirements of the new JAED and, to a lesser extent, the Economic Studies Unit of the Ministry of Industry and Trade. This report follows the broad trade and investment information assessment undertaken in June 2001 that identified the major sources and availability of trade and investment in Jordan, addressed constraints to information content and access, and identified future information needs for effective trade and investment policy and decision making.<sup>1</sup> At the same time, that report made six broad recommendations that need to be validated and elaborated given the current situation, costed out, and revised accordingly. Those six recommendations are as follows:

1. Define a trade and investment information strategy, and specifically take steps to articulate a cohesive strategy for trade and investment information collection and dissemination within the JAED and MIT.
2. Create a centralized point of information collection and dissemination according to topic or responsibility.
3. Upgrade technical capacity at the staff level, which is a prerequisite for effective decision-making.
4. Expand coverage of trade statistics and economic indicators to enable trend analysis and include in web databases.
5. Improve key Government websites.
6. Create new databases and expand existing ones essential to support upcoming trade negotiations and policy decisions.

The analysis presented in the following chapters also builds on a recently completed study undertaken on behalf of the Ministry of Industry and Trade (MIT) as part of its Center of Excellence Program.<sup>2</sup> In addition to launching that program, the MIT is moving forward quickly to implement E-Government initiatives, is continuing to streamline business registration and licensing, and is taking steps to implement its first Strategic Plan. Analysis led to recommendations on improving information systems through business process reengineering, technical assistance in the preparation of studies, economic and computer training, work planning, and technology upgrades or replacements.

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<sup>1</sup> "Trade and Investment Information Systems in Jordan", prepared by G. Boye under AMIR 1.0 Program, June 2001.

<sup>2</sup> "Jordan's Ministry of Industry and Trade Center of Excellence Program: Information Management Assessment", prepared by G. Boye under AMIR 2.0 Program, July 2002.

## **1.2 Methodology**

The approach that was adopted to undertake this consultancy is based on broad assessments of the information systems of the main agencies to be involved in trade and investment policy and decision-making under the new umbrella of JAED. Those agencies include the Jordan Commercial Center and Export Development Corporation (JEDCO), the Jordan Investment Board (JIB) and the Jordan Industrial Estates Corporation (JIEC). Based on past studies and work undertaken in Jordan in recent years, consideration is also given to other organizations that are important providers of trade and investment information such as the MIT, the Department of Statistics (DOS), the Customs Department and the Central Bank of Jordan.

Although the technology infrastructure supporting the trade and investment information of each agency was not a focus of this assessment, this subject was addressed in the context of upgrading or creating new information and data systems. As such, a team of four consultants comprising two business economists and two technical advisors was fielded, all of whom have worked extensively in Jordan and with most of the trade and investment agencies under review, and who are now also involved in the E-Government initiative. The team also drew on interviews conducted throughout the agencies, recent reports on trade and investment systems in Jordan, lessons learned from AMIR Program technical assistance underway with the E-Government program, and other AMIR Program funded studies such as the demand study of JIEC.

Given that the Investment Task Force chose Ireland as its example of international best practices and modeled the proposed structure of JAED after the Irish trade and investment agency Forfás, two members of the team traveled to Forfás offices in Dublin to gain a better understanding of information systems and applications used in Ireland. That trip also acted as a follow-up to a previous trip undertaken by a delegation of Jordanian officials and AMIR managers during the design of JAED. The information team conducted interviews with several officials in the Forfás Systems Information Department, the Enterprise Policy and Planning Division, and the Business Information Department. The cooperation that was extended by all staff of the Jordanian and Irish agencies is greatly appreciated.

## **1.3 Report Organization**

After this introduction, the report is organized as follows;

- Chapter 2 sets out the framework for the study by first discussing the current information environment in Jordan. It describes how the E-Government program and focused technical assistance are driving most trade and investment information changes in Jordan, and discusses the changing roles of key institutions before and after JAED.
- Chapter 3 explains the Irish information model that is used in Forfás, the agency after which the new JAED was modeled. It describes the institutional framework for trade and investment information in Ireland, and key data applications.

- Chapter 4 examines how information systems of the key agencies under JAED will likely change when JAED comes into effect, and the types of data applications that JAED could adopt.
- Chapter 5 presents recommendations and suggests next steps to be taken by the AMIR Program and the Government. Emphasis is placed on moving forward until the JAED is adopted.
- The Annex includes a list of meetings conducted in Jordan and Ireland as part of field research.

## 2. Framework for Information

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### 2.1 Information Environment

Nowadays, new developments in the information environment in Jordan usually refer to state-of-the art applications implemented through the E-Government program and advances made in the information technology (IT) sector, with specific emphasis on the export-oriented IT services sector. Both of these areas are dynamic, constantly introduce new changes, and depend highly on skilled human capital. While the strategies of these two areas of IT differ, their objectives are similar: enable Jordan to better compete in the local, regional and global markets while increasing economic opportunities and raising the standard of living of all citizens. Behind the scenes of these changes that have taken place during the last few years are dynamic programs, associations and institutions headed by forward-thinking groups of individuals such as the REACH Initiative, INT@J, the Information and Communications Technology Initiative (ICTI) of the AMIR Program and the Ministry of Information and Telecommunications (MOICT).<sup>3</sup>

In contrast, advances in Jordan's information environment as it relates to trade and investment are much more limited than those made in recent years in the IT sector. The changes that have occurred in trade and investment information are mainly driven by the Government's E-Government program, and limited yet focused assistance by the ICTI and PSPI Initiatives of the AMIR Program. While it is true that technological improvements have been introduced in key ministries involved in trade and investment, such as website redesign, business process reengineering, and software and hardware upgrades and new purchases, the underlying constraints to developing an integrated trade and investment information system remain relatively unchanged compared with two or three years ago. Of the six major recommendations presented in the report on trade and investment systems in Jordan in 2001, progress has been made in only two areas, and little, or no, action has been taken on the remaining four (see Box 2.1). Moreover, those advances have just begun to improve the ability of Government officials, researchers and others to make better strategic and policy-making decisions about trade and investment in Jordan.

The two areas where progress has been made include websites and the preparation of economic reports. Many websites have been redesigned, such as those for the Foreign Trade Policy Directorate of the MIT and the JIB. Yet these websites lack user-friendly interactive databases and reports to facilitate research and informed decision-making, so improvements do not go beyond the broadest level of an information system. Economic reports are mainly undertaken by international consultants without transfer of knowledge

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<sup>3</sup>The REACH Initiative mainly focuses on developing the software and IT services sector, and INTAJ is an industry association that represents the interests of its members. The ICTI focuses on enhancing the complementary roles and functions of the MOICT and Telecommunications Regulatory Commission (TRC), accelerating e-government initiatives to streamline government operations, and strengthening partners through technical assistance. Lastly, the MOICT is the Government agency responsible for coordinating all activities relating to information and technology, including information policy, intellectual property right legislation and e-commerce.

<b>Box 2.1 Status of Recommendations Made in Recent Report on Trade and Information Systems in Jordan</b>		
<b>Recommendation</b>	<b>Rationale</b>	<b>Situation in 2002</b>
Define a trade and investment information strategy	Non-clarity and overlap in roles of institutions that formulate and implement trade and investment policy led to (i) confusion, repetition and often contradiction at various levels within the Government; (ii) absence of integrated databases and redundancy in data collection.	Progress: none
Create a centralized point of information collection and dissemination according to topic or responsibility: <u>Step 1</u> —organize information according to responsibility <u>Step 2</u> —activate mechanisms to inform of new developments, including legislation.	Analysis and decision-making is based on inconsistent statistics and other information, and lack of access to legal text.	Progress: Step 1, none Step 2, some progress made through websites
Upgrade technical capacity of staff as a prerequisite for effective decision-making: <u>Step 1</u> —establish research agenda <u>Step 2</u> —carry out studies with assistance of international consultants working with local staff <u>Step 3</u> —improve and institutionalize databases and methodologies developed during research process.	Acute absence of published reports based on traditional economic analysis signals that the public sector likely lacks the capacity to undertake certain types of economic analysis that are necessary for effective strategy-building and decision-making.	Progress: Step 1, none Step 2—some made, but without training local staff Step 3—none
Expand coverage of trade statistics and economic indicators to enable trend analysis and include in web databases	Long-term time series are not readily available, especially electronically; classification scheme of data to construct certain series has changed several times; data often inflated due to accumulated misclassifications, all leading to issues of data integrity.	Progress: None
Improve key government websites	Re-design would help to remedy inconsistencies in design and improve data content by including long-term time series and other important information, including report.	Progress: Important in design, but not in improving data content and reporting.
Create new databases and expand existing ones essential to support upcoming trade negotiations and policy decisions	Jordan has an important base of information that needs to be fine-tuned, updated and expanded. Equally important is the need to create new databases of statistics and other information to support upcoming trade negotiations and policy decisions, and to make those databases user-friendly.	Progress: None
Note: Based on "Trade and Investment Information Systems in Jordan", prepared by G. Boye under AMIR 1.0 Program, June 2001 and "Jordan's Ministry of Industry and Trade Center of Excellence Program: Information Management Assessment", prepared by G. Boye under AMIR 2.0 Program, July 2002.		

to local staff. Overall, progress made to date is minimal, and is mainly driven by the E-Government program and by technical assistance offered by international donors, such as the AMIR Program. In short, institutional barriers and the continued focus on technology, as opposed to subject matter and process, remain the major barriers in developing an integrated trade and information system in Jordan.

## 2.2 Changing Structures of Key Institutions

Recent activities of Jordan's Investment Task Force (ITF) included the commissioning of a study to examine international best practices for the establishment and operation of trade and investment promotion organizations, and to recommend a model appropriate to the needs of Jordan. The study examined organizations in Ireland, Singapore, Malaysia and Costa Rica, among other countries, and recommended the adoption of a trade and investment promotion structure similar to that of Ireland. The Irish model is centered around Forfás, an agency that was created to coordinate the trade and investment promotion facilitation activities of the country, and to function as the main source of advice and recommendations to the Government on trade and investment policy and strategy. Two other agencies in the Irish Government, IDA (Industrial Development Authority) Ireland and Enterprise Ireland, are used as models to transform JIB and the JEDCO.

The ITF recommended the creation of an agency in Jordan similar to Forfás, which is to be provisionally named JAED. In addition to providing high-level policy and strategy advice, JAED would coordinate the activities of existing bodies responsible for trade and investment promotion activities, namely JEDCO, JIB, JIEC, the Free Zones Corporation, the Vocational Training Corporation, the Aqaba Special Economic Zone Authority (ASEZA) and the Jordan Tourism Board. The following sections of this chapter summarize the changing structures of JAED, and in light of the ITF and AMIR Program focus, particularly on JEDCO, JIB and the JIEC. They summarize information presented in the recently completed document on JAED, and set the framework for analyses to be presented in Chapter 4 of this report.<sup>4</sup>

### 2.2.1 Jordan Authority for Enterprise Development (JAED)

<b>Box 2.2</b> <b>JAED: Objectives and Functions <sup>a/</sup></b>	
<b>Objective</b>	Act as national policy advisory agency to expand trade and investment
<b>Key Functions</b>	Study and propose strategies, policies and programs to...
	▪ improve investment climate
	▪ develop enterprises, economic sectors and clusters
	▪ increase Jordan's economic competitiveness
	▪ improve organizational structure of corporations that implement policies
	▪ coordinate activities of investment corporations, other governmental and non-governmental entities
	▪ facilitate and monitor registration and licensing procedures to ensure compliance with international best practices
	▪ improve legislation on trade and investment
<sup>a/</sup> Modeled after Forfás Ireland.	

The objective of the creation of JAED is to establish a coherent system for defining, coordinating and implementing trade and investment promotion strategies, and to act as the national policy advisory entity on trade and investment (see Box 2.2). Its main activities include advising the Minister of Industry and Trade on matters related to enterprise development and investment, evaluating and coordinating

the performance of key investment-related agencies, advising and assisting the investment agencies to implement strategies and achieve their objectives, and carrying out research

<sup>4</sup> "A New Framework for Investment Promotion and Enterprise Development in Jordan." Prepared by the AMIR Program at the request of the National Investment Committee, June 2002."

on trade, investment and enterprise development. JAED will have no executive authority or responsibility for implementation.

The proposed structure of JAED will include four main departments and three support departments. The main departments are: Enterprise Policy, Trade Policy, Competitiveness and Coordination and Evaluation. The supporting departments include Information Systems, Finance and Personnel. Since JAED is new, it will require a building with facilities, staff, information systems including hardware, software and data applications to begin operation. A proposed organizational chart and budgets are included in the recently completed document on JAED.<sup>5</sup>

## 2.2.2 Jordan Commercial Center and Export Development Corporation (JEDCO)

<b>Box 2.3</b> <b>JEDCO: Objectives and Functions Before and After JAED</b>		
	<b>BEFORE JAED</b>	<b>AFTER JAED a/</b>
<b>Name</b>	Jordan Commercial Center and <u>Export</u> Development Corporation	Jordan <u>Enterprise</u> Development Corporation
<b>Objective</b>	√ Promote exports.	√+ Promote and facilitate enterprise development and export promotion.
<b>Key Functions</b>	√ Promote exports of goods and services through market research and analysis of exportable production.	√+ Promote international competitiveness of large companies and growth of SME through entrepreneurship and market research programs.
	√ Provide advisory services to businesses.	
	√ Implement market intelligence system.	√
	√ Organize and assist in international trade fairs.	√
	√ Promote exports through activities of strategically selected overseas offices, servicing trade agreements and facilitating export financing.	√+ Same, but with improvements such as targeted overseas offices.
	-	+ Designate donor program liaison in Ministry of Planning.
	-	+ Facilitate domestic direct investment projects.
	-	+ Facilitate the matching of investors with public or private industrial estate property through JIEC property liaison.
	-	+ Connect local demand for inputs with local supply of those inputs through linkages program.
a/ Modeled after Enterprise Ireland. √ Indicates that part of existing application can be used under new scenario. - Indicates a deletion, or that application does not exist. + Indicates an addition.		

As part of the reform process, JEDCO will undergo a radical change that will fundamentally expand its current unique focus on exports to a two-brong approach for enterprise development and export promotion (see Box 2.3). Modeled after Enterprise Ireland, the new Jordan Enterprise Development Corporation will aim to promote the growth of all sizes of companies through technical assistance that includes international best practices for management and market research, entrepreneurship skills and a wide range of business development services including feasibility studies and business plans. It will also establish a linkages program to connect local demand for inputs with local supply of those inputs. As part of its activities to promote enterprise development, the new JEDCO will act as a facilitator and liaison for new investment projects within Jordan, and establish overseas offices to promote exports to overseas markets.

<sup>5</sup> Ibid.



The new JEDCO will be structured along three main areas. The first focuses on enterprise development and includes Micro/Small Enterprise Department, Company Development (sectoral-based programs) and Program Supports Department (donor liaison, linkages, and property liaison and library and information services). The second area deals with export development and has two departments: Trade Services Department (export financing, trade agreements, export development and facilitation) and Overseas Network (export promotion, importer outreach and follow-up). The third area is that of overall organizational support, and includes the Finance Department and Personnel Department.

### 2.2.3 Jordan Investment Board

<b>Box 2.4</b>		
<b>JIB: Objectives and Functions Before and After JAED</b>		
	<b>BEFORE JAED</b>	<b>AFTER JAED <sup>a/</sup></b>
<b>Objective</b>	- Promote, facilitate and support inward direct investment. Promote enterprise development.	√- Promote, facilitate and support inward direct investment. No longer responsible for enterprise development.
<b>Key Functions</b>	- Emphasize investment facilitation.	√ Emphasize investment promotion.
	√ Conduct ad hoc research, usually based on a selected group of sectors.	√+ In collaboration with JAED, undertake rigorous and sustained sectoral research.
	√ Gather and analyze information on selected economic sectors to help JIB.	√+ Gather and analyze information on a wide range of economic sectors to help formulate country-wide investment strategy.
	-	√ Establish network of overseas offices.
	√ Follow-up provided by headquarters.	√+ Follow-up also provided through overseas offices.
	-	+ Designate donor program liaison in Ministry of Planning.
	-	+ Facilitate the matching of investors with public or private industrial estate property through JIEC property liaison.
<sup>a/</sup> Modeled after IDA Ireland. √ Indicates that part of existing application can be used under new scenario. - Indicates a deletion, or that application does not exist. + Indicates an addition.		

Modeled after IDA Ireland, the Jordan Investment Board (JIB) will also undergo an important transformation that will result in a change in responsibilities. It will no longer be responsible for enterprise development, and will focus on inward direct investment. It will emphasize investment promotion, rather than investment facilitation, establish an overseas network, and facilitate the matching of investors with industrial estates (see Box 2.4). The reform will result in a streamlined organizational structure having an Overseas Network Department (promotion, client outreach and follow-up), Marketing Support Department (including competitor analysis) and Facilitation Department (licensing, after-care service, property liaison and donor liaison). The Finance and Personnel Departments support the organization.

### 2.2.4 Jordan Industrial Estates Corporation

The role of the JIEC will narrow considerably as a result of reform in order to focus on the management of public industrial estates and the facilitation of enterprise operations within those estates (see Box 2.5). It will also assume a regulatory role in private industrial estate development, and enter into joint-venture agreements with the private sector to develop land. A new organizational chart for the JIEC has not yet been developed.

<b>Box 2.5</b>		
<b>JIEC: Objectives and Functions Before and After JAED</b>		
	<b>BEFORE JAED</b>	<b>AFTER JAED <sup>a/</sup></b>
<b>Name</b>	Jordan Industrial Estates Corporation	Unchanged
<b>Objective</b>	√ Establish, construct, provide services and manage industrial estates across Jordan to facilitate industrial development, create jobs and promote social and economic development.	√- Manage public industrial estates and facilitate firms that establish or operate businesses in these estates.
<b>Key Functions</b>	√ Study, plan, establish and manage public industrial estates across the Kingdom.	√+ Enter into joint-venture agreements with private sector developers to purchase or develop land jointly.
	√ Encourage the establishment of industrial projects in industrial estates throughout the country.	√
	√ Encourage the re-location of existing industries to established industrial estates.	√
	√ Take appropriate actions leading to the development and complementarity of industries within the industrial estates and overcome any difficulties facing them.	√
	√ Promote domestic or foreign direct investment.	- No longer involved in promoting domestic or foreign direct investment. (These functions will be carried out by JEDCO or JIB respectively.)
	-	+ Publish details of JIEC and privately-owned property through a linked information system with JEDCO, JIB, and other entities.
	√ Serve as single point of contact for information about all public property for enterprises.	√+ Same, but will expand its information base to cover private property.
	√ Develop and maintain a register of JIEC owned property for industry.	√+ Develop and maintain a register of privately owned property for industry.
	-	+ Regulatory role of private industrial estate development.
	-	+Merge with FZC to consolidate public industrial property.
<sup>a/</sup> Modeled after Enterprise Ireland. √ Indicates that part of existing application can be used under new scenario. - Indicates a deletion, or that application does not exist. + Indicates an addition.		

### 3. The Irish Information Model

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#### 3.1 Institutional Framework

Forfás is the national policy and advisory board for enterprise, trade, science, technology and innovation in Ireland ([www.forfas.ie](http://www.forfas.ie)). As the primary promoter of enterprise development, it places emphasis on investor service and facilitation to quickly translate potential projects into actual ones, and to attract new investors. In order to carry out its investment role and to also effectively manage its functions of coordinating policy of its associated agencies, it depends on up-to-date information and statistics that can be trusted, validated and acted upon quickly.

A guiding principle of the information policy established by Forfás is that data and information gathering must minimize the impact on private sector. Forfás avoids excessively long questionnaires, and designs surveys simply enough to gather complete information. It also goes to great lengths to make sure that the correct person completes the questionnaires. Forfás differs from the Central Statistics Office (CSO) ([www.cso.ie](http://www.cso.ie)) in that it produces more hands-on data that is readily available. For example, an employment survey that is undertaken in November is published one month later. In contrast, the CSO as the country's national statistical office would likely take more than one year to undertake a similar survey, along with a wide range standard data typically produced by a national statistical office. The insistence of Forfás on good solid data that is readily available allows policy makers to analyze information, quickly make recommendations and move swiftly to implementation. Because Ireland is a small economy with an equally small geography and a small population, it is easy to measure. But because of these characteristics, one large company is capable of having an enormous impact on its tax base, and perhaps on other parts of the economy as a whole.

Forfás relies on data from other governmental agencies as a base for its data warehouse. As such, one of the most important challenges is to maintain information up to date from outside organizations. Therefore, Forfás charges individuals within partner organizations with the responsibility of data maintenance. Forfás also relies on surveys to quickly gather information. Its Statistical Center has a core group of employees that hires temporary staff to conduct surveys. Even though in the past there was some overlap with the Ministry of Finance when collecting information on taxes, Forfás decided to continue since the time lag in collecting information and making it available was much shorter than that of the Ministry of Finance. Staff training is also of importance to Forfás in terms of communication (e.g., presentation skills) as well as technical skills.

In terms of the organization of the internal information system of Forfás, IT planning is driven by a three-year business plan that contains critical success factors and clearly stated objectives. Based on that plan, systems are set up to support business objectives. All systems are Oracle Client server applications. The annual budget is \$600,000 a year. Forfás IT staff is 14 people (5 developers). Network support through a help desk (including security, disaster recovery, backups) is also available. Forfás also has an internal information policy that addresses issues such as security, a disaster recovery plan, backups and Internet and email usage.

## 3.2 Key Data Applications

Box 3.1 shows the main applications that are currently in use at Forfás. The Business Information System (BIS), Infrastructure Ireland and Irish Economy Expenditures are the three important applications having to do with enterprise development, trade and investment.

<b>Box 3.1 Forfás Information Applications</b>		
<b>Application</b>	<b>Description</b>	<b>Objective</b>
Business Information System (BIS)	Enterprise database containing 3 levels: 1. Underlying data warehouse populated from various agency databases. 2. Management Information System: Pre-defined reports of detailed reports and limited access to users. 3. Executive Information System: Summary information on 3 key performance indicators: (i) employment and enterprise, (ii) competitive advantage, (iii) state costs and benefits.	Provide policy-makers with information tools to monitor, evaluate and formulate action plans to support enterprise development, while coordinating information among participating agencies.
Infrastructure Ireland <a href="http://www.infrastructure.ie">www.infrastructure.ie</a>	Displays physical, social and enterprise database stored in Oracle tables, and includes town profiles, maps and comprehensive links page.	Facilitate investment decision process and serve as early warning system for policymakers.
Irish Economy Expenditures (IEE) (to be replaced by Annual Business Survey – ABS – currently under development).	Measures net economic benefits for amount of capital invested in companies for jobs.	Helps decision-makers to determine how much funds to invest and which companies to receive assistance; also helps companies to monitor performance.
Economic Impact System: BASIS and REACH	Sub-application of BIS. Links to a portal for Government information services ( <a href="http://www.basis.ie">www.basis.ie</a> ) and <a href="http://www.reach.ie">www.reach.ie</a> , which track business cycles and estimated effects of E-Government.	Improve electronic delivery of Government information and services to the business community.
Framework System	Reporting system to track interaction of research & development (R&D) projects between Irish companies and universities.	Improve policy decisions through R&D.
R & D Survey (Innovation)	Sub-application of BIS. Includes information on business research.	Improve policy decisions through R&D.
Asset Tracking System	In-house system available on intranet to catalogue and maintain inventory of all assets.	Improve administrative decisions on assets, including IT equipment.

### 3.2.1 Business Information System

The Business Information System (BIS) was developed to provide the Department of Enterprise, Trade and Employment Forfás and participating agencies access to a common, comprehensive industrial database on which informed policy decisions are based. The main users of the system are those involved in planning and policy-making. In addition to Forfás, the participating agencies from which data are sourced include Enterprise Ireland, IDA Ireland, Shannon Development, Udarás na Gaeltachta, Irish Food Board, County Enterprise Boards and the Central Statistics Office. The business objectives of the BIS are to:

- Provide a single common source of basic information on Irish enterprises,
- Enhance the value of information collected from enterprise by sharing that information using a common identifier,

- Create a common repository with controlled access, and
- Reduce administrative burdens.

The three levels of the BIS described above in Box 3.1 allow for both summary and detailed levels with drill-down and reach-through capabilities. The database structures were created using both relational (RDBMS) and multidimensional (OLAP) technologies. The top level (Executive Information System) summarizes data to measure and monitor key performance indicators (KPI) adopted by Forfás and the participating agencies. Each measure contains a variety of dimensions. For example, data on jobs (permanent and other) are available by sector, region, employment component, grant type, enterprise size, ownership and in time series (see Box 3.2). Information on the KPI is accessed through different modules, or sub-applications, available in the BIS, e.g, Employment, Incentives, IEE Survey, ABS (Economic Impact System), Innovation and Value for Money. See Annex A for a technical description of the BIS and screen printouts of examples of information contained in the system. The system was built on Oracle Express Server (no longer supported and merged into Oracle 9i) with a 50-user license running on server using Citrix technology. At the time of report preparation, the BIS was not available on the Internet due to high licensing costs of Oracle.

<b>Box 3.2</b> <b>Forfás BIS: Key Performance Indicators</b>		
<b>Employment and Enterprise</b>	<b>Competitive Advantage</b>	<b>State Costs and Benefits</b>
<ul style="list-style-type: none"> <li>▪ Jobs (permanent and other)</li> <li>▪ Gross Job Gains</li> <li>▪ First-Time Jobs</li> <li>▪ Start-Ups</li> <li>▪ Job Losses</li> <li>▪ Closures</li> <li>▪ Net Change</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sales</li> <li>▪ Exports</li> <li>▪ Profitability</li> <li>▪ Productivity Trends</li> <li>▪ Business Expenditures</li> <li>▪ Training Indicators</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total Grants Paid/Non-Grant Supports</li> <li>▪ Equity Paid</li> <li>▪ Grant Cost per Job Sustained</li> <li>▪ Grant Cost per Job per Year</li> <li>▪ Grant Cost per Job Approved</li> <li>▪ Irish Economy Expenditure (IEE)</li> <li>▪ Progress of Approved Projects</li> </ul>

The BIS is considered the key application of Forfás in terms of sharing data across agencies and facilitating policy and decision-making to promote enterprise development. It was developed out of the need to share and gather feedback across different agencies involved in enterprise development. The total development time was two years, the first of which included planning in a Steering Group and the second of which included system development. Also during that period data gathering was undertaken, which took one and a half years. The key to BIS success is that the Steering Group was able to foster agency buy-in by creating key indicators that were meaningful to all agencies. Another contributing factor was that participating agencies recognized their responsibility in correcting the many data problems that were encountered during system development, and took action to ensure that future problems would be avoided at all costs. The commitment to rectify existing data problems before linking to the BIS avoided 'piggy-backing' on incorrect systems. Despite these successes, Forfás officials stressed that staff from other agencies that refuse to provide accurate data on time could threaten the system and that the system will fail if top management does not make the commitment to timely information.

### 3.2.2 Infrastructure

The Enterprise Policy and Planning Division of Forfás developed Infrastructure Ireland, a web mapping and database application that provides a breakdown of infrastructure

capabilities in various parts of Ireland ([www.infrastructure.ie](http://www.infrastructure.ie)). The purpose of the application is to offer information to a potential investor on the physical infrastructure of Ireland, thereby saving him time so that he can focus on other information needed to make the decision to invest. An underlying objective of the application is to encourage investment in the Border, Midland and Western (BMW) regions of Ireland that lack industrial infrastructure and shift investment away from the crowded Dublin area. It also provides Forfás with an advance warning system for infrastructure weaknesses, such as insufficient electricity supply in certain parts of the country.

The application contains an Internet-based databank of tables and maps showing the physical infrastructure of the country (e.g., telecommunications, roads, water, waste facilities) and the social infrastructure (e.g., demographics, education, training, hotels). It also shows an agency-supported enterprise database, and has a comprehensive links page. The system reports on 123 localities around Ireland that have a minimum population of 1,500 persons. The methodology used to design and make the system operative was to first undertake a pilot study using five towns. The Forfás team defined the data requirements by selecting indicators, then sent questionnaires to local authorities, including managers of infrastructure such as airports. All data gathering took place during two years by Forfás employees and temporary staff. The website was launched in December 2001, and has the ability to add new indicators as needed.

### **3.2.3 Irish Economy Expenditures**

The Irish Economy Expenditures (IEE) application measures net economic benefits provided for amount of capital invested in companies for jobs. An annual survey is undertaken to measure linkages and data lineage between supply and demand in Ireland. The objective of the application is to determine the internal rate of return (IRR) of policy decisions and programs. It is used as a source to identify new programs, and measures the impact of the National Technology Transfer Program and the National Linkages Program.

### **3.2.4 Other**

Forfás has developed other applications that feed into the BIS system, that include the so-called Framework System to track interactions between universities and companies for R&D purposes and the survey that compiles information on research in the private sector. A new application is currently under development that would replace the IEE. The Annual Business Survey (ABS) would contain about 20 questions on sales, export value, destination of exports, training and research and development. The Asset Tracking System is used by the Facilities Department to make maintenance and purchasing decisions. It depends on data from assets that are tagged with bar codes.

## **3.3 Key Reports**

Forfás publishes many reports on its website that are of interest to policy-makers and researchers both in and outside Ireland. In addition to its Annual Report, Forfás publishes studies on strategies for private sector growth ('Enterprise 2010'), competitiveness ('Annual Competitiveness Report and the Competitiveness Challenge Report') and annual employment surveys.

## 4. Changing Information Systems

### 4.1 Overview

When the new JAED is approved, action should be taken to begin the redesign of the current information systems or the development of new ones. The following sections of this chapter present systems that currently exist, and offer suggestions for new ones. Annex B offers details on the applications that are summarized below. The information presented in this chapter also draws from Annex C, which presents a gap analysis of information according to the proposed organizational structure of JAED, JEDCO, JIB and the JIEC.

### 4.2 Jordan Commercial Center and Export Development Corporation

<b>Box 4.1 JEDCO: Information Systems Before and Suggestions for After JAED</b>	
<b>BEFORE JAED</b>	<b>AFTER JAED</b>
Trade Data (using DOS statistics, downloadable in PDF or Word)	-+ Link to Economic Studies Unit/MIT w/ downloadable data in spreadsheet format
Products	Complete revision required.
Country Profile	Complete revision required.
Matchmaking	<b>+ Linkage Program and Database</b>
-	√+ Entrepreneurship Information System: Sample Business Plans, Feasibility Studies, Market Research
-	<b>+ 'One-Stop Shop' for Investors and Supporting Reporting System</b>
-	<b>+ JEDCO-JIEC Property Liaison</b>
-	+ Export promotion application with sub-application for international fairs follow-up
-	+ Electronic link to overseas offices
-	+ Monitoring & Evaluation System
Main website + 7 additional: Export directory Economic Agreements Amman Trade Point Bar Coding EU-JOR Partnership Agreement Institute of Packaging	See Annex B. Complete revision required.
Notes: (i) For a complete description and comments on current ('BEFORE JAED') applications and websites, see Annex B; (ii) this box is a summary of information presented in Annex C, Box C.2 JEDCO Gap Analysis; (iii) all applications under the 'AFTER JAED' scenario should include web-enabled databases, where practical, and reporting systems for management and the general public; (iv) 'AFTER JAED' applications in bold will require greatest amount of effort and funding.	

The information systems, including the multiple websites, which are currently in operation in JEDCO, will require complete revision under the new JAED structure. In addition, a new set of applications will be required (see Box 4.1). The greatest amount of effort and funding will be needed to develop and implement the three systems to (i) develop a linkages program and database, (ii) support the registration of investment projects ('One-Stop Shop'), and (iii) facilitate the process of matching investors with public or private industrial estate property (JEDCO-JIEC Property Liaison). The property application will require a link to JIEC and other industrial estates. A fourth new system

should be added that is focused on entrepreneurship. This system will likely be able to benefit from off-the-shelf software and research publications on key markets of Jordan currently available through other organizations such as the International Trade Center of UNCTAD. A fifth new application that will require some customized development will focus on export promotion, with a sub-application for follow-up on international fairs. Given the numerous export promotion agencies in the world, JEDCO should be able to tap the experiences of others countries in designing this new system. Electronic links to overseas offices should also be established, which can be accomplished mainly through an extranet.

<b>Box 4.2 Key EU Recommendations for Upgrading JEDCO Information Services</b>	
<b>Recommendation</b>	<b>Expected Impact</b>
Implement a Client Needs Survey	Information needs defined to serve clients, and established or improved JEDCO-client relationships.
Design Promotional Program	Positive image of JEDCO created in business community and JEDCO's services promoted.
Implement System for Internal Communication & Coordination	Internal communication organized and regulated, resulting in improved information flow and enhanced decision-making.
Expand Trade Fair Activities	Focused promotional activity before and after fair, including follow-up.
Redesign Information Services and Website	Services known to exporters and clients and expanded coverage to non-Arab speaking markets.
Implement systems to measure progress, impact and results	Systematic approach provided to all activities using international best practices so that adjustments are made; also important for budgetary purposes.
Source: Ibid.	

The European Union recently funded a study on the upgrading of information services and marketing and promotion activities of JEDCO.<sup>6</sup> The recommendations that can be carried over under the new JAED structure are presented in Box 4.2 and expand on those related to information applications above. The recommendation to implement systems to measure progress, impacts and results is particularly important.

### 4.3 Jordan Investment Board

The JIB has two investor information systems, an Investor Services Database (ISD) that has been in place since 1996, and an Investor Tracking System/Management Information System (ITS/MIS), in place since 2000. The ITS/MIS system was financed by AMIR 1.0, and was developed by a local company (CDG) with Microsoft Access 97 using SQL2000 as a backend server. Only those employees who work directly with investors have access to this system, which currently number about 20. The ITS was intended to replace the ISD that was created using Oracle 8 for Windows 2000 servers, in the Arabic language. The ISD has limited features and flexibility, lacks a follow-up system and has an inadequate reporting system. Give these limitations, promotion officers rely on email for information on the status of investors. Despite the obvious need for an improved application and requests made by upper management, JIB staff resisted the adoption of the new ITS. The basic complaint was that the new ITS system is not user-friendly, is inefficient and complicated, and that the Arabic Oracle (ISD) system used is sufficient for

<sup>6</sup> "JEDCO: Upgrading of Information Services and Marketing & Promotion Activities for a Semi-Governmental Jordanian Organisation." Final Report for Project JOR/B7/4100/IB/97/0302-01/BA06, January 2001.



the requirements of the JIB. Moreover, transfer to the new system required JIB staff to re-key basic data, which they were apparently unwilling to do.

Printout screens of the ITS were studied and evaluated. It is clear that the “English” only interface is one of the problems that may be causing the system to be considered difficult to use. Many details are required when filling out the data fields, and most staff do not wish to enter this data twice, *i.e.* once in the ISD Oracle system and again in the ITS. A proposed solution is the integration of both databases/systems into one and upgrading to Access 2000. While the costs of upgrading to Access 2000 (JD 800) and to hire a technician to enter data are not excessive, the commitment of management to stop the use of the ISD is needed. Given the past track record of the JIB in not adopting the ITS and the high cost in terms of time of AMIR staff to manage the transfer of data and implementation of the new system, it is suggested that before proceeding with yet another upgrade and further design that a written agreement be prepared between JIB management and the AMIR Program outlining the responsibilities of each agency with this application and others.

<b>Box 4.3</b>	
<b>JIB: Information Systems Before and Suggestions for After JAED</b>	
<b>BEFORE JAED</b>	<b>AFTER JAED</b>
Investment Promotion System	√+ Revised, with new focus on FDI <u>a/</u>
Investor Tracking System	√+ Revised, with new focus on FDI <u>a/</u>
‘One-Stop’ Service web applications: work permits and visas	√+ Revised, with new focus on FDI <u>a/</u>
On-line investment application	Revised to include HS code w/link to linkage database
Website	Upgraded website to (i) reflect revised responsibilities, (ii) include on-line database of statistics and reports for public and private use, (iii) on-line database for investor information accessible by investor. See comments in Annex B.
<p><u>a/</u> It is recommended that future AMIR support be contingent upon the commitment of JIB management to fully adopt new applications.</p> <p>Notes: (i) For a complete description and comments on current (‘BEFORE JAED’) applications and websites, see Annex B; (ii) this box is a summary of information presented in Annex C, Box C.3 JIB Gap Analysis; (iii) all applications under the ‘AFTER JAED’ scenario should include web-enabled databases, where practical, and reporting systems for management and the general public; (iv) ‘AFTER JAED’ applications in bold will require greatest amount of effort and funding.</p>	

#### 4.4 Jordan Industrial Estates Corporation

The proposed merger between the JIEC and the Free Zones Corporation (FZC) implies that databases and applications currently housed in the two agencies will be combined or managed by one agency. The FZC application that is of interest to the proposed merger is the investment system that contains about 4,000 records of information on investors located in the free zones throughout Jordan. The FZC investor database is already linked with two other sites, one of which is located near the Queen Alia International Airport. The JIEC maintains a similar application for investors located in the industrial estates under its control. The merger of these two databases is important to better understand investment in Jordan and to track the different incentives offered by free zones and industrial estates. At the present time, the information contained in both databases is not shared electronically or otherwise between the FZC and JIEC, or with the JIB. However, both the FZC and the JIEC have each tried to link their databases with the companies’ database at the Ministry of Industry and Trade without success. The failure was mainly

due to inconsistent identification numbers and data fields. Although language should not be an issue in the merger of the two applications since they were both created in Arabic, the future need to present the application in English for further development for web-based statistics and reporting should be considered.<sup>7</sup>

Before the merger of the two applications is considered, serious data problems with the JIEC database that were uncovered as a result of a recent AMIR Program consultancy on market demand in industrial estates require correction.<sup>8</sup> Annex B provides details on the data accuracy and integrity problems encountered, and those that remain despite reports by the JIEC that the errors were corrected. A systems analyst working with the ICTI Component of the AMIR Program also examined the database, and found systemic and procedural failures that indicate that the database is not capable of producing consistent information.

## **4.5 Other Key Institutions**

### **4.5.1 ASEZA**

The Aqaba Special Economic Zone Authority (ASEZA) was launched in 2000. It is an independent authority made up of six regulatory commissioners. ASEZA is in the early stages of building its information systems. Although budgeting and staffing limitations have constrained the implementation of information plans beyond the core infrastructure (email, network, servers, etc.), ASEZA has a plan for IT and a management information system. The fact that a plan exists demonstrates that ASEZA is well beyond national investment agencies in terms of information management. Nonetheless, in the case of ASEZA the next step would be to develop data repositories from which pertinent information can be extracted, followed by the implementation of complete information systems.

A report was recently prepared on an 'E-Assessment' of ASEZA whose objective was to lay the groundwork for IT planning in broad terms between the AMIR Program and ASEZA.<sup>9</sup> With regard to the content side of information management systems, as opposed to the systems side, the author recommended that the AMIR Program learn from the experiences of ASEZA in implementing its 'one-stop shop' to assist investors. While similar to the business process reengineering (BPR) currently underway at the MIT, that being undertaken at ASEZA is much less complicated than that at the MIT since it does not require approvals from various ministries, and the registration procedures at ASEZA are already streamlined. Nonetheless, the report stressed that lessons could likely be learned from studying the redesign process at ASEZA and the ways in which the associated technologies were implemented. An international consultant and local consulting firm already initiated the first phase of the BPR design at the Companies

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<sup>7</sup>In addition to the investor database, the FZC maintains a manifest application that tracks goods going in and out of the free zones. This application is the main one of the FZC. Initiated in 1999, the database is reportedly enormous, containing over 2,000,000 records. It is electronically linked to the National Customs Administration ASYCUDA system, and a merger between the two systems is to take place at the end of 2002. The FZC also maintains applications for financial transactions and personnel records, as does the JIEC.

<sup>8</sup>"JIEC Market Demand Study for Serviced Industrial Estates". Prepared by A. Erdmann with the assistance of H. Uraidi, April 2002.

<sup>9</sup>"ASEZA E-Assessment". Version 0.6. Prepared by A. Tahami, Development InfoStructure, October 2002.

Control Directorate and Central Registry Directorate at the MIT. Plans are currently being made by the PSPI Subcomponent to initiate a second phase.

ASEZA is also looking for an off-the-shelf solution to track investments. It has considered a customer relations management/sales lead and contact management software tool whose primary user is contemplated to be the Investment Directorate. ASEZA scheduled the procurement and installation of that system by end-2002. This system appears similar to the investor tracking system described above that was developed by the AMIR Program for the JIB. Once JAED takes effect, and if the JIB system is implemented, it would be useful to share information from the two systems to avoid duplication in follow-up efforts. At the present time, it is not recommended that the AMIR Program follow a path similar to ASEZA in purchasing an off-the-shelf solution, since it has already invested significant level of time, effort and money in upgrading the JIB investor tracking system, as described above.

In addition to the investor database, ASEZA maintains the ASYCUDA (Automated System for Customs Data) system and a database on food imports. In the case of database access provided to ASEZA by other organizations, ASEZA taps into the national income tax and chamber of commerce databases. The Free Zone Corporation has now been assimilated within ASEZA, while the JIEC remains as an independent body and has a liaison officer within the Investment Promotion Department at ASEZA.

#### **4.5.2 Others**

No work is currently underway in the area of trade and investment at the Department of Statistics (DOS) or the Central Bank of Jordan (CBJ), with the exception of the United Nations Economic and Social Commission for Western Asia (ESCWA) project on FDI. The objective of this project is to stimulate FDI in the ESCWA region by strengthening the networks and the cooperation of the participating governments in the area of FDI data systems.<sup>10</sup> It targets capacity-building of government agencies in data compilation to construct the required quality and accurate database on FDI. This project also assists the member countries in formulating appropriate policies and applying measures that will promote inflows of FDI. The JIB is the focal point for this project, with participating representatives from DOS, Central Bank of Jordan and the MIT.

Apart from that project, no progress during the last two years has been made in improving the availability of basic external trade statistics and industrial statistics. The website of DOS still offers limited (not time-series, or long-term) trade statistics that are difficult to use, and no advances have been made to upgrade industrial statistics on public versus private sector supply (domestic production, imports and change in stocks) and use (domestic consumption and exports). Likewise, the problems reported two years ago on the timeliness and accuracy of statistics on trade and goods and trade in services originating from the Central Bank reportedly remain. Although the ESCWA project should help to upgrade FDI statistics, without action to improve trade and industrial statistics, policy-making and research will remain weak and unsupported by data.

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<sup>10</sup> Saudi Arabia, Lebanon, Syria, Bahrain, Oman and Jordan were selected to participate in this project.

## 4.6 Jordan Authority for Enterprise Development

<b>Box 4.4 JAED: New Information Systems</b>	
<b>New System</b>	<b>Notes</b>
Business Information System (BIS)	Based on Irish model; must be tailored to Jordan.
Infrastructure Jordan	
Annual Business Survey	
Research reports	Defined by research agenda.
Trade and Investment Portal	Possibly part of website.
Website	To be developed; see Forfás as example.
Back-Office Applications	Use off-the-shelf applications as much as possible.
Notes: (i) This box is a summary of information presented in Annex C, Box C.4 JAED Gap Analysis; (ii) all applications should include web-enabled databases, where practical, and reporting systems for management and the general public.	

The launching of the JAED will create a new institution that will require completely new information systems. The so-called ‘front-office’ systems could be modeled after applications currently in use in Forfás/Ireland; the ‘back-office’ systems could be developed using off-the-shelf applications. The systems that could be adapted from the Irish information model include the BIS, Infrastructure Jordan (based on Infrastructure Ireland) and the Jordan Annual Business Survey (see Box 4.4). A series of research reports could be produced in the following broad areas: general trade and investment (issues papers, impact studies of certain trade agreements), Jordan-US FTA (potential of services exports to USA, comparative costs of production and investment in the Middle East), modeling (impact assessments with macroeconomic model, computable general equilibrium model), general economic studies (effective rates of protection, impact of economic reforms on certain sectors using total factor productivity approach). A complete description of these types of studies and the data needed were reported in a recent report on information systems in Jordan.

## 5. Next Steps

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### 5.1 Overview

The document presents the analysis and results of an initial trade and investment information needs assessment that focuses on the requirements of the new JAED, and is a follow-up to the broad trade and investment information assessment undertaken in June 2001. It also intends to validate or reject six recommendations made in that report as a means of taking initial steps towards an integrated trade and information system for Jordan.

Notwithstanding the acceptance or rejection of the six recommendations, the analysis presented in the preceding chapters of this report indicates that policy makers can act now to improve the current trade and information system in Jordan, rather than wait for JAED to be approved. Even if JAED is not approved, a plan can still be designed to create the basis of a coordinated and interactive information system. The likely candidate responsible for initiating change and its implementation in the absence of JAED is the Ministry of Industry and Trade, the agency to which JAED will ultimately report. A Chief Information Officer (CIO) is currently being recruited by the AMIR Program under the MIT Center of Excellence Program who will work on an 'loan' basis initially at the MIT and then transfer to each of the JAED-related institutions for a short period of time. Ultimately, it would be most beneficial for JAED to hire its own CIO to effectively establish and manage an integrated trade and investment information system.

Until the MIT CIO is recruited, the E-Government program can act an impetus to make progress, as in the past. Also, the PSPI and ICTI Components of the AMIR Program should coordinate their activities to make sure that joint efforts are maximized while working towards a bi-level plan of action. The first level sets the framework for a business model and defines how agencies will work together. The second level addresses the current situation: no standards of data or information exist, no way to communicate across agencies is present, and no information is shared across agencies. The main agencies in question are the MIT, the JIB, JEDCO and JIEC. Each level is discussed in more detail in the following sections of this final chapter of the report, and the recommendations made in the June 2001 report are validated or rejected.

### 5.2 Recommendation Level 1: Set Framework for Business Model

The first level of recommendations involves setting the framework for the JAED business model (see Box 5.1). The business model is one part of the information architecture of an overall information management system for JAED and its partner institutions. Ideally, the CIO would lead the development of such a model, which is part of an overall information management (IM) plan. In the absence of such a plan and a CIO, a steering committee could be established with representatives from JIB, JEDCO and the JIEC to discuss the following basic issues. Such representatives would not be IT staff, rather managers or staff with economic and business backgrounds.

<i>Box 5.1 Setting a Framework for a JAED Business Model</i>	
<i>Issues</i>	<i>Discussion</i>
<i>How will information sharing, updating and publishing policies be established? What are the basic ideas for information sharing?</i>	<i>Policies will be set by the Steering Committee led by JAED. Public information will be shared on Internet; non-public information to be shared on WAN with controlled user access. Information will be extracted from each agency.</i>
<i>What content will be delivered? What markets or communities will your product serve?</i>	<i>Trade and investment information about Jordan, competing countries and global environment; research reports on Jordan.</i>
<i>What is the product or service? Is it an online database or application? Why is it needed?</i>	<i>Online databases, investor applications, research reports whose objective is to facilitate policy decisions, inform exporters, importers and investors and manage day-to-day operations of trade and investment related agencies.</i>
<i>What media will you be using to convey the content? What means will you use to distribute to the targeted markets or communities? What is particularly innovative about the model in its distribution aspect? What is the real value of the innovation?</i>	<i>Wide area network and Internet.</i>
<i>In what ways will this product or service be distinctive, if not unique? What justifies this distinction relative to market needs and potential cost-benefits? How does the model follow or correlate to core strategies?</i>	<i>Will be based on the successful Irish information model and international best practices in information management.</i>
<i>What organization or entity will own and/or publish the products and services? Why and how is this entity qualified for this undertaking?</i>	<i>See Box 5.2 below.</i>
<i>How is the project and total enterprise to be financed, both initially and over the long term?</i>	<i>Some technical assistance support from AMIR program; other financial assistance from each entity.</i>

### **5.3 Recommendation Level 2: Standardize Information to Enable Sharing Across Agencies**

This report has outlined and provided details on the numerous databases, websites and applications on trade and investment that are housed by JEDCO, JIB and the JIEC. An earlier report on the MIT outlines the information available in that ministry. The common feature of the information reviewed in these reports, regardless of its form and whether it is on or off-line, is that it is not standardized, and no standards exist to establish

guidelines. The numerous databases containing company information and the fact that no single identification or tracking number exists provide good examples of this situation. So the first step would be to adopt a tracking number for company registration at the lead agency, the MIT, and use that same number in the various company and investor databases at the JIEC, JEDCO and ASEZA. At the same time, information that categorizes companies along sector or activity lines should also be standardized using international codes (such as International Standard Industrial Classification, or ISIC) to the greatest extent possible. In cases where products are matched to company profiles, Harmonized System (HS) codes should be used. The successful completion of this step will, in part, help agencies to take first steps in 'cleaning up' their databases. While undertaking this task, they will likely discover errors in data entry and report generation that will also require correction.

Issues of data ownership should also be tackled at this level. For example, decisions need to be made on which agency creates and maintains which data and information, where it is housed and why. While such decisions are difficult without a lead agency such as JAED, progress can be made now within the existing information structure of the trade and investment institutions and on the assumption that JAED will go forward. Box 5.2 assigns responsibilities for new and existing data applications and suggests timing for action based on analysis presented in Chapter 4. Priorities are marked with a symbol (▲); applications in bold type will likely require the greatest amount of funding and effort.

<b>Box 5.2</b> <b>Assigning Responsibilities and Tasks for A New Trade and Information System</b>			
<b>Responsible Agency</b>	<b>Application</b>	<b>Action Needed</b>	
		<b>Before JAED</b>	<b>After JAED</b>
<b>MIT</b>	<b>Companies Control and Central Registration Databases</b>	-Adopt common company tracking number to be used in MIT and across all agencies. ▲ -Lay out Master Plan for company registration and licensing within MIT and outside (to be undertaken by CIO). ▲ -Design new internal and external reporting system.	Draw on statistical reports for policy decisions
<b>JEDCO</b>	<b>Linkage Program and Database</b>	-Undertake inventory of data-bases that could be used in program. ▲ -Based on that inventory, implement recommendations to standardize databases. ▲	Lay out framework for linkage program and assign responsibilities.
	<b>'One-Stop Shop' for Investors and Supporting Reporting System</b>	-Investigate successes and failures in ASEZA and JIB and apply international best practices to design JEDCO One-Stop Shop under JAED scenario.	*Create database from existing JIB information. *Implement one-stop shop and reporting system.
	<b>JEDCO-JIEC Property Liaison</b>	-Sketch out database design based on JIEC (see 12 below).	Using parameters of JIEC database, create new database on property for JEDCO.
	Trade Data from DOS	-Decide which trade statistics are of most use to exporters and importers, and work with DOS to clean up those statistics. ▲	Create application on website to provide snapshots of trade situation or reports that permit user-defined queries (building on DOS statistics).

<b>JEDCO</b> (cont'd)	Entrepreneurship Information System: Sample Business Plans, Feasibility Studies, Market Research	-Investigate experiences of other countries and off-the shelf software.	Implement system.
	Monitoring & Evaluation System	-Investigate experiences of other countries and off-the shelf software.	Implement system.
	Website	-Design new layout.	Implement new site.
Responsible Agency	Application	Before JAED	After JAED
<b>JIB</b>	Investor Promotion System (IPS)	-Hire technicians to determine ways to standardize or combine IPS and ITS, making sure to use company tracking number from the MIT and to completely revise reporting system (internal and external). ▲	▪ Transfer part of database to JEDCO and link two systems.
	Investor Tracking System (ITS)		▪ Transfer part of database to JEDCO and link two systems.
	IPS & ITS	-Based on (3) above: ▲ ▪ Clean up JIB databases. ▪ Clean up JIB reporting system (internal) and create new reports on web. ▪ Create plan to improve existing JIB one-stop shop.	
	Website	Add basic investment reports to web.	Upgrade to reflect new responsibilities.
<b>JIEC</b>	Investor Database	-Clean up JIEC database and standardize information based on recommendations in linkages report, making sure to use MIT company tracking number. ▲ -Investigate design of FZC database and made adjustments to conform to JIEC database.	Merge two databases.
<b>JAED</b>	Business Information System (BIS)		To be developed.
	Infrastructure Jordan		To be developed.
	Annual Business Survey		To be developed.
	Research reports	Set research agenda and define further information requirements. ▲	
	Trade and Investment Portal		To be developed.
	Website		To be developed.
	Back-Office Applications		To be developed, using off-the shelf applications to greatest extent possible.
▲ Priority.			
Notes: (i) Bold type indicates likely high effort and funding will be required; (ii) based on Chapter 4.			



## 5.4 Validation of Previous Recommendations

<b>Box 5.3 Validation of Previous Recommendations</b>	
<b>Recommendation</b>	<b>Validation</b>
1. Define a trade and investment information strategy, and specifically take steps to articulate a cohesive strategy for trade and investment information collection and dissemination within the JAED and MIT.	<u>Valid</u> , but must wait for approval of JAED. In the meantime, work towards data standardization through newly-established steering committee.
2. Create a centralized point of information collection and dissemination according to topic or responsibility.	<u>Partially valid</u> . Following the Irish model, JAED would act as the central collection point for new applications such as Business Information System and new research reports that would consolidate investment statistics. New structures of JIB, JEDCO and JIEC would re-allocate existing databases and create new ones, but JAED would have to take lead in combining data from different sources.
Upgrade technical capacity at the staff level, which is a prerequisite for effective decision-making.	<u>Valid</u> . To be done through training (e.g. technical assistance by AMIR program or other donor such as ESCWA project), or technology transfer by international consultants.
Expand coverage of trade statistics and economic indicators to enable trend analysis and include in web databases	<u>Valid</u> . Department of Statistics should expand and improve coverage of trade statistics; economic indicators should be developed under new BIS system managed by JAED.
Improve key Government websites	<u>Valid</u> . Websites of JIB, JEDCO will require overall redesign, while those of MIT and JIEC will not require as much effort. JAED will require creation of website.
Create new databases and expand existing ones essential to support upcoming trade negotiations and policy decisions.	<u>Valid</u> . First must outline negotiations and policy decisions to be taken and design databases. An example is upcoming WTO negotiations in trade in services.
Note: Refer to Box 2.1, "Status of Recommendations Made in Recent Report on Trade and Information Systems in Jordan".	

## 5.5 Costs

Detailed budgets were developed with the assistance of technicians in the ICTI Component of the AMIR Program. Those budgets have been incorporated into the AMIR 2003 Work Plan.

## **Annex A:**

### **Business Information System Technical Overview**

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## **Annex B:**

### **Investment Databases, Websites and Information Systems**

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<b>Box B.1 Investment Databases, Websites and Information Systems in Jordan</b>							
<b>Agency</b>	<b>Database Name &amp; Year.</b>	<b>Database Format</b>	<b>Database Size</b>	<b>Database Description, Reports &amp; Content</b>	<b>Format of Report/ Language</b>	<b>Comments and Suggested Improvements</b>	<b>Website Address &amp; Content Description</b>
<b>JIEC*</b>	Investor Services: -Investor Inquiries -Approved Projects -Land and Buildings Contracts -One-Stop Shop Licenses -Individual Investor History and Profile (i.e. Production, Capacity, Markets, Labor, Status of Payments, Water and Wastewater Emissions).	Oracle (Version 8)	1,000 records	Reports provide basic information on the investor, (i.e. name, contact details, nationality, registered and paid capital, number of employees, contract details with the agency, items produced and export markets).	Text printout Arabic	See Annex C.	See Table B.2
<b>JIB*</b>	Investor Services (1996): -Approved Projects -One-Stop-Shop -Licenses -Visas	Oracle (Version 8)	1,000 records	Reports provide detailed information about total investments in broad sectors, investments by Governorate, and projects classified in sectors and sub-sectors (ISIC 4 digits) that have benefited from the Investment Law and associated incentives.	Word, PDF Arabic	Stop using and migrate to new system.	See Table B.2
	Investor Tracking System/ Management Information System (ITS/MIS) – (2001)	Access 1997 with SQL (2000) Backup	Note: To date, no data have been entered.	A large decision-making support mechanism developed with AMIR support and not yet implemented.	Excel Arabic/ English	Before updating to Access 2000, with SQL (2000 Backup), obtain written commitment on behalf of JIB management.	na

<b>Box B.1 Investment Databases, Websites and Information Systems in Jordan</b>							
<b>Agency</b>	<b>Database Name &amp; Year.</b>	<b>Database Format</b>	<b>Database Size</b>	<b>Database Description, Reports &amp; Content</b>	<b>Format of Report/ Language</b>	<b>Comments and Suggested Improvements</b>	<b>Website Address &amp; Content Description</b>
<b>FZC*</b>	Manifest Application	Sun servers mid-range level with SOLARIS 5.7 system.	Millions of records – approx. 2000 transactions daily.	Reports on goods and cars movement, in and out of the FZC sites.	Arabic statistical reports & some text.  English database started in 1999.	<b>Evaluation:</b> - Fully integrated database with three applications. - No reported problem with system. - Continuous upgrading activities being undertaken.  <b>Status Quo:</b> - All FZC sites (Zarqa, Sahab & Queen Alia International Airport) are linked together via fiber optic cables. - An ability to be linked to any other agency database exists, but all attempts have failed. - Currently, an electronic link exists with the Customs Department (ASYCUDA).	See Table B.2
	Investor Services Application (1996)	Sun servers mid-range level, with SOLARIS 5.7 system.	4,000 records	Reports provide basic information on the investor, (e.g., name, contact details, nationality, registered and paid capital, number of employees, contract details with the agency, items produced and export markets).	Arabic statistical reports & some text.  English database started in 1999.	<b>Projects underway:</b> - Links private free zones. - Links with the CCD database at the Ministry of Trade and Industry. - Participation in E-Gov't.	See Table B.2
<b>JEDCO *</b>	Jordanian Exporters Directory (1989)	Oracle (Version 8 & 9)	1,396 records	Contact information on exporters and products.	Word Text. Printout/ screen Arabic/ English	Revision needed.	<a href="http://www.jedco.gov.jo">www.jedco.gov.jo</a> : Information on JEDCO'S services, activities, etc. <a href="http://www.atp.jedco.gov.jo">www.atp.jedco.gov.jo</a> Information about Amman trade point and its activities and services. See Table B.2
	Foreign Importers (1989)	Oracle (Version 8 & 9)	850 records	Contact information on foreign importers.	Word Text. Printout/ screen Arabic/ English	Could be used in creation of linkage database.	<a href="http://www.iop.jedco.gov.jo">www.iop.jedco.gov.jo</a> Information about Jordan's institute of packaging hosted by JEDCO and it is activities. See Table B.2
	Fairs System (1989)	Oracle (Version 8 & 9)	556 records	Fairs outside Jordan conducted by JEDCO.	Text printouts/ screen; part Arabic/part English	Use as basis for new fair application to promote and follow-up on fairs.	na

<b>Box B.1 Investment Databases, Websites and Information Systems in Jordan</b>							
<b>Agency</b>	<b>Database Name &amp; Year.</b>	<b>Database Format</b>	<b>Database Size</b>	<b>Database Description, Reports &amp; Content</b>	<b>Format of Report/ Language</b>	<b>Comments and Suggested Improvements</b>	<b>Website Address &amp; Content Description</b>
	Country Profiles (1989)	Oracle (Version 8 & 9)	35 records	Economic and general information about countries	Text printouts/ screen; mainly Arabic	Revision needed.	
	Agreements System (1998)	Oracle (Version 8 & 9)	650 records	Information on economic-related agreements.	Text printouts/ screen; Arabic/ English	Better used as part of MIT website.	<a href="http://www.agreements.jedco.gov.jo">www.agreements.jedco.gov.jo</a> An information system containing economic related information about countries that signed trade agreements with Jordan. <a href="http://www.joreu.jedco.gov.jo">www.joreu.jedco.gov.jo</a> An information system explaining by case study how can exporters benefit from the EU Partnership Agreement. See Table B.2
	EAN system (1998)	Oracle (Version 8 & 9)	461 records	Jordanian companies having bar-coding system.	Text printouts/ screen; Arabic/ English	Likely obsolete.	<a href="http://www.ean.jedco.gov.jo">www.ean.jedco.gov.jo</a> containing information on EAN bar coding systems & Jordanian companies having barcodes. See Table B.2
	Services Companies directory (1998)	Oracle (Version 8 & 9)	263 records	Information on services companies.	Text printouts / screen; Arabic/ English		na
<b>Amman Chamber of Industry</b>	Industrial Information Bank (1993)	Oracle (Version 7, 8 & 9)	7,500 records	Information may be filtered by sectors, sub-sector, ISIC and CPC codes and ACI code.	Word Text and statistics. Printout / screen Arabic/ English	- Fully integrated database. - No problem with system. - Continuous upgrading activities being undertaken. - No links with any other agency, however, infrastructure available to be linked with the CCD at the MIT, and any other agency, e.g. Customs and other Chambers of Industry.	
	Export Data Bank (1993)	Oracle (Version 7, 8 & 9)	7,500 records	Information may be filtered by sector, product, region, quantity, and rules of origin.	Word Text and statistics. Printout / screen Arabic/ English		

<b>Box B.1 Investment Databases, Websites and Information Systems in Jordan</b>							
<b>Agency</b>	<b>Database Name &amp; Year.</b>	<b>Database Format</b>	<b>Database Size</b>	<b>Database Description, Reports &amp; Content</b>	<b>Format of Report/ Language</b>	<b>Comments and Suggested Improvements</b>	<b>Website Address &amp; Content Description</b>
<b>JIEC*</b>	Investor Services: -Investor Inquiries -Approved Projects -Land and Buildings Contracts -One-Stop-Shop Licenses I-individual Investor History and Profile – i.e. Production, Capacity, Markets, Labor, Status of Payments, Water and Wastewater Emissions	Oracle (Version 8)	1,000 records	Basic information on the investor (e.g., name, contact details, nationality, registered and paid capital, number of employees, contract details with the agency, items produced and export markets).	Text printout Arabic	See Annex C.	See Table B.2
<b>ASEZA</b>	ASYCUDA	Oracle	Unknown	Import/Export value			
	Food imports	OLAP, SQL		Food types and inspection criteria			
	ASEZA Registered Companies (Investor Database)	XML, SQL	Unknown	Information on companies, (e.g., name, contact details)			

Agency has an Intranet web containing information regarding internal issues and employee's information.

<b>Box B.2 Evaluation of Jordan's Investment-Related Websites</b>									
<b>Agency</b>	<b>Website</b>	<b>Initial Impression</b>	<b>Country, Agency Profile</b>	<b>Sector - Specific Information</b>	<b>Incentive Overview</b>	<b>Statistics Available</b>	<b>ISIC/HS Classifi- cation Present</b>	<b>Links</b>	<b>On-line Forms, inquiries, Publications</b>
<b>JEDCO</b>	<a href="http://www.jedco.gov.jo">www.jedco.gov.jo</a>	5	6	6	na	3	no	6	5
	<a href="http://www.atp.jedco.gov.jo">www.atp.jedco.gov.jo</a> Amman trade point and its activities and services.								
	<a href="http://www.iop.jedco.gov.jo">www.iop.jedco.gov.jo</a> Jordan's institute of packaging hosted by JEDCO and its activities.								
	<a href="http://www.joreu.jedco.gov.jo">www.joreu.jedco.gov.jo</a> Case study on how can exporters can benefit from the EU Partnership Agreement.								
	<a href="http://www.agreements.jedco.gov.jo">www.agreements.jedco.gov.jo</a> Economic information on countries that signed trade agreements with Jordan.								
	<a href="http://www.ean.jedco.gov.jo">www.ean.jedco.gov.jo</a> EAN bar coding systems & Jordanian companies having barcodes.								
<b>Comments / Recommendations</b>	An excessive amount of information is displayed on the homepage. JEDCO's mission has always been export development and has had no traditional role in promoting investment in Jordan. Website therefore needs to be developed to accommodate JEDCO's role as approved under JAED. Some statistics and sector studies are provided. JEDCO offers six different and specialized websites, as described above. It is recommended that a more simplified homepage be designed with clear links to the available websites, and that each individual website be redesigned.								



Box B.2 (cont'd)

Evaluation of Jordan Investment-Related Websites										
Agency	Website		Initial Impression	Country Agency Profile	Sector - Specific Information	Incentive Overview	ISIC/HS Classification Present	ISIC/HS Classification Present	Links	On-line Forms, Inquiries, Publications
JIB	<a href="http://www.jordaninvestment.com">www.jordaninvestment.com</a>		9	8	7	9	2	N/A	6	8
Comments / Recommendations	Main website describing JIB activities, law and incentives, QIZ information, sectoral studies of sectors with a competitive advantage, and has an on-line investors application and enquiry form. Provides links with relevant economy and investor related websites. Website is being re-designed and content information updated. There are two databases linked to the on-line applications that increase user interactivensess. Links are good, but again only focus on national agencies. Coverage may be developed to encompass international websites, service providers, information on market access and preferential investor treatment opportunities provided by bilateral and regional trade and investment agreements. Backward and forward industrial and service linkages may be introduced when identifying and promoting new investment opportunities.									
JIEC	<a href="http://www.jiec.com">www.jiec.com</a>		7	8	N/A	7	4	N/A	6	5
Comments / Recommendations	Minimum amount of information is available on the homepage. Drop menus support this where relevant. Advantages, incentives and procedures for investing in a public sector industrial estate site should be more visible and attractive. Minimum statistics on JIEC investments are provided, which could be further developed to highlight specific sector and product growth trends, export markets etc. Links focus on relevant Jordanian agencies. Coverage could be extended to encompass international websites, service providers, information on market access and preferential investor treatment opportunities provided by bilateral and regional trade and investment agreements. Publications only include JIEC brochures. Studies and annual reports may be placed online in the future. Size of graphic files (JIEC sites for on-line location selection) may be reduced to expedite download time. Sitemap could be made available too.									
FZC	<a href="http://www.free-zones.gov.jo">www.free-zones.gov.jo</a>		7	7	N/A	7	N/A	N/A	N/A	N/A
Comments / Recommendations	Website may be re-designed and updated to include all types of information and links that are relevant for investors. Statistics illustrating the volume of trade transaction may be included to illustrate the extent of activities in these locations. Investment procedures may be highlighted, and advantages and incentives to invest in FZ may be emphasized. Awareness of customs procedures may also be promoted. Application forms and studies may be made available on line too. (b) Investors may wish to choose their location in a FZ online as well (as the case is with the JIEC), therefore the website may be developed to accommodate such a service.									
ASEZA	<a href="http://www.agabazone.com">www.agabazone.com</a>		10	10	N/A	9	N/A	N/A	6	9
Comments / Recommendations	Homepage takes some time to open as it has graphics and is a Flash presentation. Links are focused on national agencies. Coverage may be developed to encompass international websites, service providers, information on market access and preferential investor treatment opportunities provided by bilateral and regional trade and investment agreements. Backward and forward industrial and service linkages may be introduced when identifying and promoting new investment opportunities. Supporting statistics should be made available on-line especially to illustrate the growth and types of investment occurring in Agaba.									
Notes: The evaluation presented above takes into account the needs of investors, policy-makers and researchers. As such, focus was made on the type of information that would be required by such users. Website contents and presentation were ranked on a scale of 1-10, with one being at the bottom of the scale, 5 an average rank and 10 as a top score										

## **Annex C:**

### **Gap Analysis: Before and After JAED**

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<b>Box C.1 JEDCO: Information Gap Analysis</b>				
<b>Proposed Unit Under New JAED Structure</b>	<b>Main Functions</b>	<b>Current Information that Could be Applied and Modified</b>	<b>Database/Application Needed under New Structure</b>	<b>Comment</b>
Micro/Small Enterprise	<ul style="list-style-type: none"> <li>▪ Entrepreneur development</li> <li>▪ Micro &amp; small enterprise development</li> </ul>	None currently available.	<ul style="list-style-type: none"> <li>▪ Entrepreneurship Information System: Sample Business Plans, Feasibility Studies, Market Research</li> </ul>	NEW
Company Development	<ul style="list-style-type: none"> <li>▪ Sectorally-based programs &amp; assistance</li> </ul>	Services Company Directory	<ul style="list-style-type: none"> <li>▪ Sectoral information application, including research reports</li> <li>▪ One Stop Shop for Investors and Supporting Reporting System</li> </ul>	NEW
Program Supports	<ul style="list-style-type: none"> <li>▪ Donor program liaison</li> <li>▪ Technology transfer</li> <li>▪ Linkage</li> <li>▪ Property Liaison</li> <li>▪ Library &amp; Information Services</li> </ul>	Library Services	<ul style="list-style-type: none"> <li>▪ Link to Ministry of Planning</li> <li>▪ Linkage Program</li> <li>▪ Property Liaison Application</li> </ul>	ALL NEW
Trade Services	<ul style="list-style-type: none"> <li>▪ Export financing</li> <li>▪ Trade Agreements</li> <li>▪ Export Development &amp; Trade Facilitation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Jordanian Exporters Directory</li> <li>▪ Foreign Importers</li> <li>▪ Agreements System</li> <li>▪ EAN System</li> <li>▪ Services Company Directory</li> <li>▪ Country Profiles</li> <li>▪ Trade statistics</li> <li>▪ Products</li> <li>▪ Matchmaking</li> </ul>	Complete revision required.	Modified JEDCO database could be linked with exporter database in MIT (IDD) and Chambers of Industry and Commerce.
Overseas Network	<ul style="list-style-type: none"> <li>▪ Export Promotion</li> <li>▪ Direct Importer Outreach</li> <li>▪ Direct Importer Follow-Up</li> </ul>	<ul style="list-style-type: none"> <li>▪ Jordanian Exporters Directory</li> <li>▪ Foreign Importers</li> <li>▪ Fairs System</li> <li>▪ EAN System</li> <li>▪ Services Company Directory</li> </ul>	Complete revision required.	
Finance	<ul style="list-style-type: none"> <li>▪ JEDCO Budgets</li> <li>▪ JEDCO Financial Mgmt. &amp; Accounting</li> <li>▪ Procurement</li> <li>▪ Facilities</li> <li>▪ IT/Information Systems</li> <li>▪ Incentives Administration</li> <li>▪ Legal</li> <li>▪ Corporate Targets/Performance/ Monitoring</li> <li>▪ Internal Audit</li> </ul>	Unknown.	To be established, including monitoring and evaluation (M&E) system.	M&E system critical to planning, reporting and future operations.

<b>Box C.2 (cont'd)</b> <b>JEDCO: Information Gap Analysis</b>				
<b>Proposed Unit Under New JAED Structure</b>	<b>Main Functions</b>	<b>Current Information that Could be Applied and Modified</b>	<b>Database/Application Needed under New Structure</b>	<b>Comment</b>
Personnel	<ul style="list-style-type: none"> <li>▪ HR Strategy</li> <li>▪ Recruitment/Development</li> <li>▪ Pay/Pension</li> <li>▪ Performance Mgmt.</li> <li>▪ Services Staff</li> </ul>	Unknown.	To be established.	
Other	Website Intranet	6 independent websites.	To be combined and completely revised.	
Notes: For summary, see Chapter 4, Box 4.1.				

<b>Box C.2 JIB: Information Gap Analysis</b>				
<b>Proposed Unit Under JAED Structure</b>	<b>Main Functions</b>	<b>Current Information that Could be Applied and Modified</b>	<b>Database/Application Needed under New Structure</b>	<b>Comment</b>
Overseas Network	<ul style="list-style-type: none"> <li>Promotion</li> <li>Direct Client Outreach</li> <li>Direct Client Follow-Up</li> </ul>	Investor Tracking System	Reports (Internal and External)	Modifications needed to only include foreign direct investment; all information on local investment will be transferred to JEDCO; Domestic offices to use this information also (not limited to overseas network)
Marketing Supports	<ul style="list-style-type: none"> <li>Marketing Strategy</li> <li>Advertising</li> <li>Press/PR</li> <li>Promotional Events</li> <li>Promotional Literatures</li> <li>Competitor Analysis</li> </ul>	No data applications currently in effect.	<ul style="list-style-type: none"> <li>Applications to be developed to track marketing efforts.</li> <li>Scope to be defined under competitor analysis to define data application.</li> </ul>	Business process reengineering (BPR) likely required.
Facilitation	<ul style="list-style-type: none"> <li>Geographic or sectoral allocation of responsibilities</li> <li>Licensing facilitation</li> <li>After care service/Follow-up</li> <li>Donor Program Liaison</li> </ul>	Investor Services Databases: (a) Approved projects (b) One-Stop-Shop Licenses (c) Visas	<ul style="list-style-type: none"> <li>Replace with Investor Tracking System.</li> <li>Donor Program Liaison to be established.</li> </ul>	Modifications needed to only include foreign direct investment; all information on local investment will be transferred to JEDCO
Finance	<ul style="list-style-type: none"> <li>JIB Budgets</li> <li>JIB Financial Mgmt. &amp; Accounting</li> <li>Procurement</li> <li>Facilities</li> <li>IT/Information Systems</li> <li>Incentives Administration</li> <li>Legal</li> <li>Corporate Targets/Performance/Monitoring</li> <li>Internal Audit</li> </ul>	Working now towards ISO certification.	To be established.	Follow up to ISO required; extensive work to be undertaken to create new data applications.
Personnel	<ul style="list-style-type: none"> <li>HR Strategy</li> <li>Recruitment/Development</li> <li>Pay/Pension</li> <li>Performance Mgmt.</li> <li>Services Staff</li> </ul>	Working now towards ISO certification.	To be established.	Follow up to ISO required; extensive work to be undertaken to create new data applications.
Other	Website  Intranet			Current website will be redeveloped to comply with new activities. Intranet to be created.
Notes: For summary, see Chapter 4, Box 4.3.				

<b>Box C.3 JIEC: Information GAP Analysis</b>				
<b>Existing Unit</b>	<b>Main Functions</b>	<b>Current Information that Could be Applied and Modified</b>	<b>Database/Application Needed under New Structure</b>	<b>Comment</b>
Investment Affairs	<ul style="list-style-type: none"> <li>▪ Promotion</li> <li>▪ Customer Services and Licensing facilitation (One-Stop Shop)</li> <li>▪ Direct Client Outreach</li> <li>▪ Direct Client Follow-Up</li> <li>▪ Legal Affairs</li> <li>▪ Research and Studies</li> <li>▪ Investor Data Entry</li> </ul>	No longer involved in promotion, information to be transferred and combined with existing JIB systems and new JEDCO systems.		
Environment, General Safety and Services	<ul style="list-style-type: none"> <li>▪ Landscaping</li> <li>▪ Monitoring and follow-up</li> <li>▪ Laboratory, Testing and Water Treatment</li> <li>▪ Pest control</li> <li>▪ Issuing and renewing Professional Licenses</li> <li>▪ Maintenance of JIEC territory and available equipment</li> </ul>			
Planning and Development Affairs	<ul style="list-style-type: none"> <li>▪ Planning and Coordination</li> <li>▪ Administrative Planning and Development</li> <li>▪ Quality control</li> <li>▪ Supervision of Staff Training and Skills Dev.</li> </ul>	Same.	Same.	Same under JAED.
Engineering Affairs	<ul style="list-style-type: none"> <li>▪ Engineering studies</li> <li>▪ Conducting feasibility studies</li> <li>▪ Project design, implementation, supervision and follow-up</li> <li>▪ Issuing building permits for investors wishing to build their own factories</li> <li>▪ Land Survey and drawings</li> <li>▪ Zoning and Building</li> <li>▪ Electro-mechanical services</li> <li>▪ After care service/Follow-up</li> </ul>	All systems.	Same.	Same under JAED.
Finance	<ul style="list-style-type: none"> <li>▪ JIEC Budgets</li> <li>▪ JIEC Financial Mgmt. &amp; Accounting</li> <li>▪ Procurement</li> <li>▪ Facilities</li> <li>▪ Incentives Administration</li> <li>▪ Corporate Targets/Performance/ Monitoring</li> <li>▪ Internal Audit</li> <li>▪ Treasury</li> </ul>	All systems.	Will require modification according to new mandate and responsibilities.	
Personnel	<ul style="list-style-type: none"> <li>▪ Administrative Management</li> <li>▪ HR Strategy</li> <li>▪ Recruitment/Development/Training</li> <li>▪ Pay/Pension</li> <li>▪ Performance Mgmt.</li> <li>▪ Services Staff</li> </ul>	All systems.	Will require modification according to new mandate and responsibilities.	

<b>Box C.3 JIEC: Information GAP Analysis</b>				
<b>Existing Unit</b>	<b>Main Functions</b>	<b>Current Information that Could be Applied and Modified</b>	<b>Database/Application Needed under New Structure</b>	<b>Comment</b>
Information Technology Affairs	<ul style="list-style-type: none"> <li>▪ IT/Information Systems design, programming and maintenance</li> <li>▪ Networking and integrating all IT systems present in all JIEC industrial Estates sites with that of the Head Office</li> <li>▪ Data management and analysis</li> <li>▪ Statistical Report Production</li> <li>▪ Training Staff on MIS systems</li> <li>▪ Updating website</li> <li>▪ Coordination and Liaison with National Information Centers and Public sector bodies.</li> </ul>	All systems.	Will require modification according to new mandate and responsibilities.	Focus on improving systems to facilitate management decisions and reporting of economic data.
Public Relations	<ul style="list-style-type: none"> <li>▪ Information and Communications</li> </ul>			
Note: The JIEC has a head office and three operating industrial estate sites with independent management structures that reflect the basic units described above. The Aqaba International Industrial Estate opened in October 2002, and is the first public sector industrial estate that has been awarded to a private sector developer to promote and manage.				

<b>Box C.4 JAED: Information Gap Analysis</b>				
<b>Proposed Unit</b>	<b>Main Functions</b>	<b>Current Information that Could be Applied and Modified</b>	<b>Database/Application Needed under New Structure</b>	<b>Comment</b>
Enterprise Policy	<ul style="list-style-type: none"> <li>▪ Sectoral strategy</li> <li>▪ Infrastructure requirements</li> <li>▪ Incentives/Finance/Taxation</li> <li>▪ Regional Strategy</li> </ul>	Inputs from JEDCO Inputs from JIEC/FZC Inputs from Ministry of Finance Inputs from MIT, JIB, JEDCO	Research reports. Infrastructure Jordan. Research reports. Research reports.	Reports to be included on website.
Trade Policy	<ul style="list-style-type: none"> <li>▪ WTO/FTA Issues</li> <li>▪ Inward/Outward Trade Development</li> </ul>	Inputs from MIT	On-line statistical snapshots; research reports.	To be included on website.
Competitiveness	<ul style="list-style-type: none"> <li>▪ International Comparisons/Benchmarking</li> <li>▪ Surveys &amp; Review</li> </ul>	Inputs from Competitiveness Unit/MOP	Statistical application to be developed with focus on Competitiveness Yearbook.	To be included on website.
Coordination & Evaluation	<ul style="list-style-type: none"> <li>▪ Agency Programs/Performance Evaluation</li> <li>▪ Liaison with Ministries/Other Agencies</li> <li>▪ Legislative Developments</li> </ul>	Inputs from various agencies  Inputs from various agencies  Official Gazette	To be developed.	
Information Systems	<ul style="list-style-type: none"> <li>▪ Systems to support policy analysis &amp; data evaluation</li> <li>▪ Systems to properly manage agency</li> </ul>	None	BIS Infrastructure Jordan Annual Business Survey Research reports Back-office systems	To be developed.
Finance	<ul style="list-style-type: none"> <li>▪ JAED Budgets</li> <li>▪ JAED Financial Mgmt &amp; Accounting</li> <li>▪ Procurement</li> <li>▪ Facilities</li> <li>▪ Corporate Targets/Performance Monitoring</li> <li>▪ Internal Audit</li> </ul>	None	Back-office systems	Use OTS as much as possible.
Personnel	<ul style="list-style-type: none"> <li>▪ HR Strategy</li> <li>▪ Recruitment/Development</li> <li>▪ Pay/Pension</li> <li>▪ Performance Mgmt</li> <li>▪ Services Staff</li> </ul>	None	Back-office systems	Use OTS as much as possible.
Notes: For summary, see Chapter 4, Box 4.4.				



## **Annex D: An Example of the Urgent Need for Reliable Data: The Case of the JIEC Investor Database**

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The following briefs were prepared by AMIR consultants working with the PSPI Component on the market demand assessment for industrial estates. They highlight problems encountered while conducting research, and those that remain after action was reportedly taken to correct them. Unless these deficiencies are permanently corrected and mechanisms are introduced to prevent future occurrences, decisions will continue to be made using incorrect information and subsequent research could provide misleading conclusions and recommendations. Moreover, the urgency of correcting these data integrity problems should be addressed well before merger with other databases, or sharing of information with other agencies is considered.

## Overview of JIEC Data Problems

The AMIR Program recently undertook a study to assess the market demand for additional industrial estates in Jordan. The study was conducted in close cooperation with the JIEC, whose data AMIR used to assess historical industrial estate growth trends.

### A. Data Requested

In order to predict future growth of demand for industrial estate space, JIEC provided AMIR consultants access to its databases. Specifically, the consultants requested a query of JIEC's database that would yield the following:

- Number of companies located in each industrial estate (IE) every year since the IE has been in operation
- Amount of land area used by each company
- Nationality of each company's investors
- Capital investment of each company
- Countries to which each company exports
- Date in which the company terminated its lease with the JIEC, if applicable
- Company's status as a QIZ
- Economic activity of company

The following table was provided to the JIEC as an example of the type of output that was needed.

Primary Key (ID)	Company Name	Location	Activity	QIZ	Date Entered IE	Date Vacated IE	Land Area (m2)	Capital Investment JD	Nationality Investor	Export /Sell
23	AZ Molds	Al Hassan	Molds	No	7-1991	NA	5,000	100,000	Jordanian	Jordan
54	Camel	Karak	Clothes	Yes	3-2000	NA	12,000	500,000	Taiwan	USA
101	Fine	Sahab	Tissue	No	2-1994	NA	7,000	1,000,000	Jordan	Jordan, Syria
134	Abu Zeid Co.	Al Hassan	Plastic utensils	No	1-1990	4-1999	500	350,000	Egypt	Jordan, Egypt

### B. Challenges Encountered

JIEC was not able to run a single query that could provide AMIR with data in the format requested. Therefore, consultants worked closely with the JIEC over the course of six weeks to run multiple queries, and manually key data into an Excel format useful for analysis. The following describes the main challenges faced when processing JIEC's data.

1. **JIEC data exists in several versions of Oracle.** This is due to the computerization process that the corporation has gone through. It was understood from the responsible staff that the system has not been fully tested before; therefore queries requested by AMIR consultants could not be generated in a one-time application. Data was entered at various times and in different versions. In 2001, Oracle was used to unify all software systems.

2. **Separate queries required for each item requested.** Some companies appear on one query, but not another. For example:
  - i) A query requesting a grouping of all active investors manufacturing items classified by product family plastics and rubber or articles thereof, would produce a report containing 200 companies. In another universal report that does not classify investors according to their type of product, one finds 380 companies actually producing plastic and rubber products of all types.
  - ii) A query requesting information on land and/or standard factory buildings rented or bought by an investor. The universal query report would generate summarized results about each investor that was largely different than the results generated when requesting a detailed report about industrial space uptake only.
  - iii) A query requesting a grouping of active investors by type of product and export market would include inactive investors that are not even present on the JIEC site. This verification could only be done after a specific report requesting active investors exporting specific products to target markets.
3. **Companies often have multiple entries within a single query, and are not delineated with a primary key identifier.** For example Aqaba Cooking Oil Factory has owners of different nationalities. The company would appear once under every nationality group. In some cases not particularly applicable to the above example, the same company was given different ID numbers at different times (probably with every new contract it signed with the JIEC). Investor ID numbers given to new investors do not necessary follow in a series, e.g.: ID 23,24,25, 26, 30,31,32,33.... The gap with ID's 27-29 are not given to any investors. This largely confuses a researcher when they want to know how many investors are there at any one JIEC and wishes to use the ID number as an indicator. However in some instances, missing ID's in a series would be ID's of those investors who have closed down their operation, but the only way to confirm any of these assumptions would be to ask for another specific query that lists active and inactive investors.
4. **Consultants could not be given these reports in English or in an excel sheet format, which meant the need to translate and manually key in all raw data by assigned persons on this task. This prolonged the level of effort period and much delayed the final report delivery to the JIEC.**

Note: Further examples of specific JIEC data problems are reported in additional documents containing all queries requested from the JIEC.

**AIDE MEMOIRE**

TO: Steve Wade, AMIR Program Director

DATE: June 6, 2002

RE: JIEC Database Follow-up

As requested, I have followed up on the problems that had been identified when undertaking the market assessment study on industrial estates during February-March. Most issues concentrate on data accuracy. To make sure that the problems have been corrected, the JIEC produced the same customized data runs (queries) that I requested during the study in February.

These were then compared and below are the findings:

1. In general some corrections were made and new errors have been introduced. Double entry data on investors had been corrected meanwhile new data on new investors has been introduced.  
  
Ex: The same investor information appears twice was corrected so that it only appears once. Other double entries that contain duplicate investor data but different contract numbers has not been corrected, which possibly results in overstatement of investments.
2. Additional data on individual investors appeared in the new (June) report.  
  
Ex. February 2002 report contained investor ID's 21, 22, 26, 27 and the June report shows ID's 21,22, 23, 24, 26,27. This shows that the February report possibly understated the investment data.
3. The data in the new report appeared in a different sequence than the February report. While this difference does not signal a data problem, it may indicate a possible problem in programming.
4. Some data on investors disappeared in the June report, but was present in the February report, indicating that this record could have been deleted from the data base or just does not appear in the print out. Additional information was requested to clarify this situation (e.g., date of contract end) but not provided.  
  
Ex. Investor ID 105 was present in February and gone in the June report.
5. Illogical dates appeared in both reports that could signal problems in data entry. Ex. For investor 149, the date the contract was signed was April 1, 1999, but the date it was effective was July 1,1990.

ICTI Consultant also visited the JIEC and found systematic and procedural failures in their databases (see attached email correspondence). We believe that this fundamental problem is shared by other agencies. The ICTI Consultant is going to prepare a SOW to focus on reporting issues, which should make it apparent that the database is not capable of producing consistent information, and will likely expose further requirements for modifications.

## Annex E: Meetings Conducted

Organization	Name	Title
AMIR Program	Mr. Charles Krakoff	Leader, Policy Component
	Ms. Sherry Youssef	Market Linkages Specialist, ICTI Component
	Mr. Abed Shamlawi	IT Specialist
	Ms. Suhair Khatib	Business Management Specialist, Microenterprise Initiative
	Mr. Barry O'Connell	Investment Promotion Advisor
The Royal Hashemite Court	Ms. Jumana A. Salti	Research Officer, Economic Department
Ministry of Planning	Mr. Rashad Mutie Bibars	Researcher, Competitiveness Unit
Ministry of Finance, Customs Department	Ms. Somaya Al-Wahoush	IT Manager
Jordan Export Development Corporation (JEDCO)	Mr. Farouk Al-Hadidi	Director General
	Mr. Atef Abed Al-Rahman	Director, Computer Center
Jordan Investment Board (JIB)	Ms. Reem Badran	Director General
	Mr. Mazen Homoud	Deputy Managing Director
	Mr. Imad Ababneh	Acting Director for Planning Development & Information Services
	Mr. Mousa Diabat	Zarqa Branch Manager
	Mr. Fawwaz Al-Nahar	Director, Promotion Department
	Mr. Mohammad Asfour	Promotion Officers, Information Technology Sector
	Mr. Tareq Farhan	
	Mr. Rasheed Al-Nahlawi	IT Manager
	Mr. Jamil Al-Asfar	Project Director, Investment Promotion Project
	Ms. Iman Naimi	Programmer
	Mr. Ahmad Al-Qasieer	Researcher, Facilitation Department, One Stop Service
	Mr. Khalil Kassab	Visa Department, One Stop Services
Jordan Industrial Estates Corporation (JIEC)	Mr. Amer Majali	Director General
	Mr. Oussama Shafakoj	Director, Information Center
Free Zones Corporation	Mr. Elias Fakhoury	Director, Investor Services Department
	Mr. Ayman Hunayiti	Director, IT Department

(cont'd)

## Annex E: Meetings Conducted (cont'd)

Organization	Name	Title
National Information Center	Mr. Fadhl Sweedan	Director, Technical Services
	Ms. Ghaswa Malhas	Coordinator, Economic Cluster
Department of Statistics	Ms. Siham Ghammouh	Head, External Trade Relations
	Dr. Fathi Nsour	Director, Households and Income Surveys Department.
	Mr. Omar Hakouz	Head, National Account Division
Central Bank of Jordan	Dr. Ghassan F. Ifram	Executive Director, Research Department
	Mr. Walid Abuzir	Research Department
	Ms. Jamila Omari Mr. Issa Saleh	
Amman Municipality	Mr. Izz-eldin Shamout	Director, Professional Licensing Department
	Mr. Mohammad Al-Zughoul	Programmer, IT Department
JABA – American Chamber of Commerce in Jordan	Ms. Zeina Goussous	Researcher
Zarqa Chamber of Industry	Mr. Mohammed Arsalan	General Manager
Amman Chamber of Industry	Ms. Abeer Fawaeer	Manager, IT Department, EBDA Project Technical Manager
Amman Chamber of Commerce	Mr. Mohammad Ammar	Director General
	Mr. Gregor Ajamian	Director, IT Department
Aqaba Special Economic Zone Authority (ASEZA)	Mr. Omar Qawas	Management Information Systems Director
	Mr. Louay Al-Khatib	Director, Investment Promotion and Marketing
Irbid Chamber of Industry	Mr. Ghazi Said Haddad	Manager
	Ms. Muyassar Azzam	Irbid Chamber of Commerce Representative, Al-Hassan Industrial Estate (QIZ).
Al-Hassan Industrial Estate Corporation (Irbid) (QIZ)	Mr. Ishaq A.Hijazeen	Manager
	Mr. Hani Deabat	Head, Investor Services Section.
World Trade Center	Mr. Samer Asfour	Executive Director
Young Entrepreneurs Association	Ms. Deena Dukhqan	Executive Director

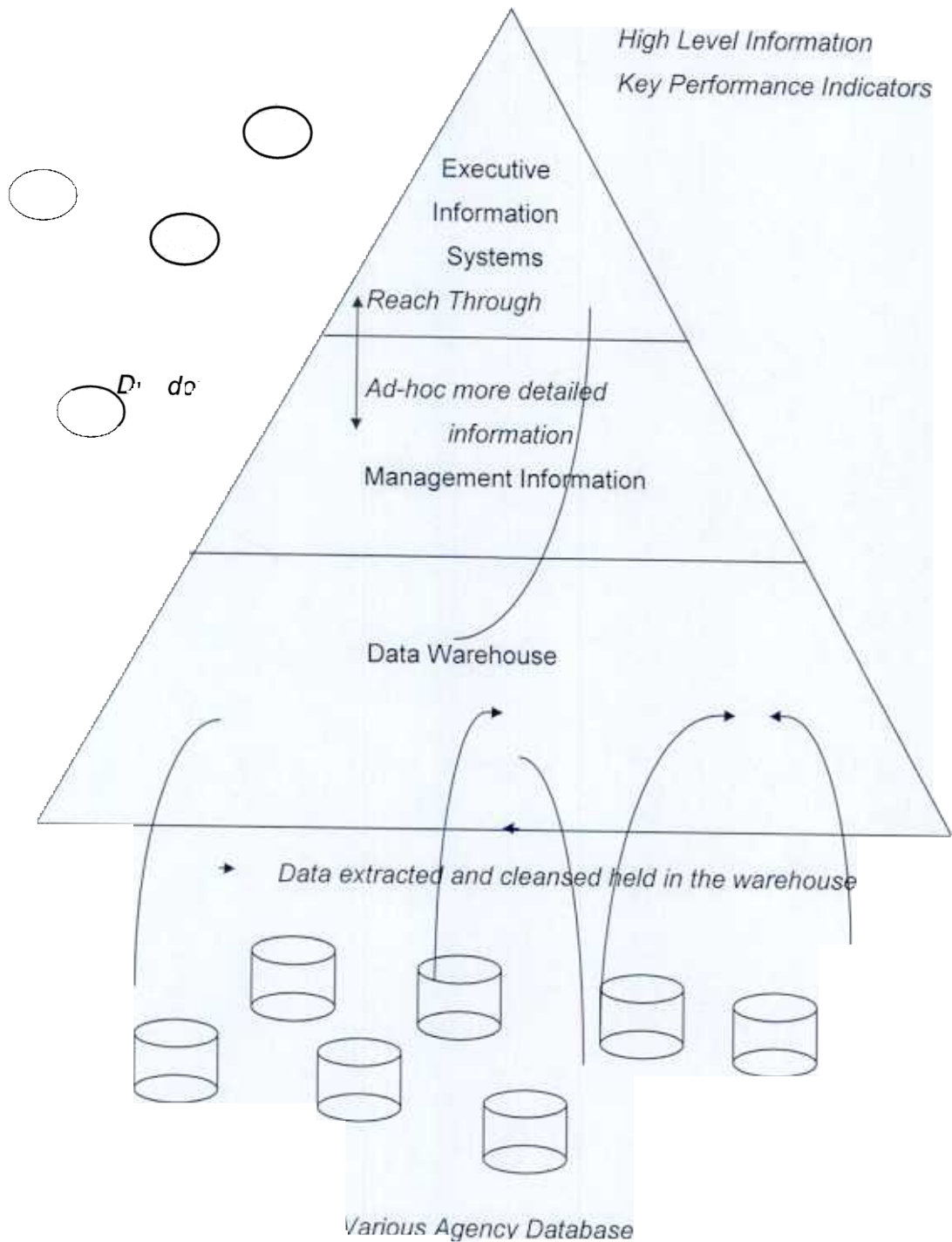
## Annex E: Meetings Conducted (cont'd)

Organization	Name	Title
FORFAS Ireland	Mr. David Lovegrove	Secretary
	Mr. Eugene Reilly	Manager, Finance, Taxation & Policy Information Enterprise Policy and Planning Department
	Mr. Finbarr Tumelty	Manager, Business Information and Application Development
	Ms. Marie Bourke	Tax Finance Manager, Enterprise Policy & Planning Division
	Mr. Eamonn Kearney	Manager, Systems Development
	Mr. Martin Kerrigan	Systems Department
United National Economic and Social Commission for Western Asia (ESCWA)	Mr. Antoine Mansour	Chief, Trade, Investment & Enterprise Section
DEVIS (Development Infostructure)	Mr. Peter Gallagher	President
	Mr. Amir Tahami	Analyst

Overview of the Business Information System

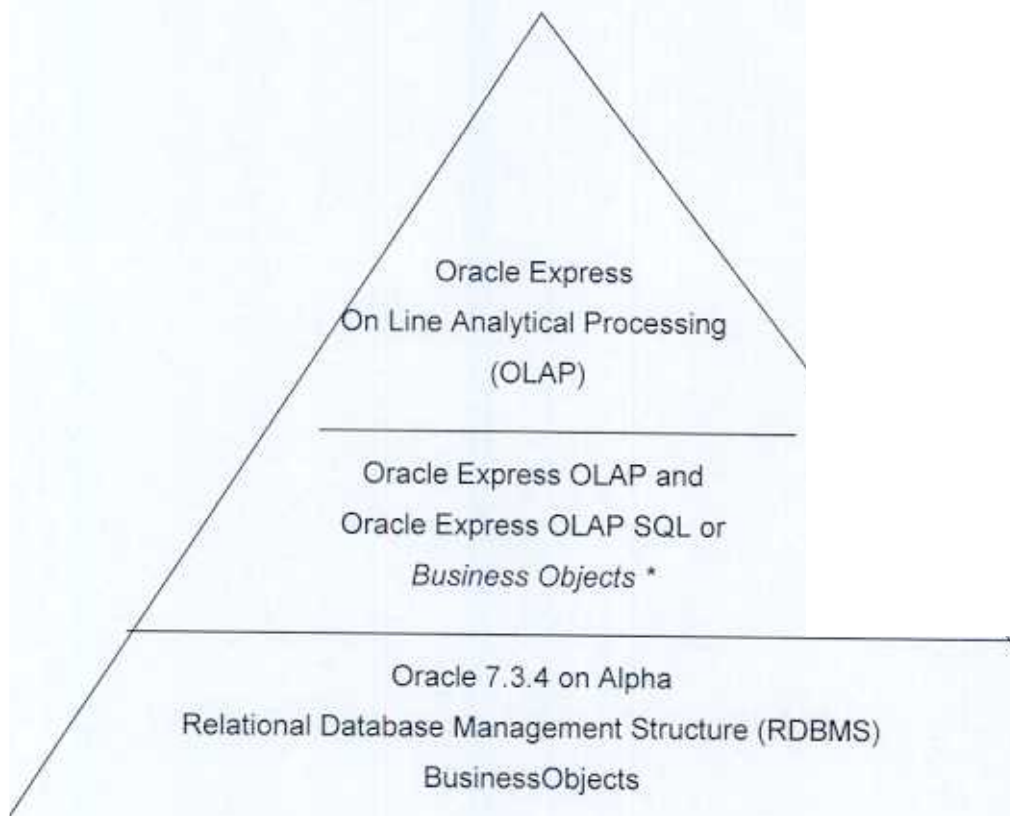
## 2. Business Information System (BIS) Overview

Multiple Types of Users





### 3. Business Information System (BIS) Product Overview



The BIS comprises a Load and Live warehouse with over 100 tables - reference, system and agency data tables.

Secure remote access to the BIS is provided using Citrix Winframe technology which allows WAN access for users in the Department of Enterprise, Trade and Employment, IDA Ireland and Enterprise Ireland and dial up modem access for Shannon Development, Údarás na Gaeltachta and Bord Bía.